

Flight, August 21, 1914.

# FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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## EDITORIAL COMMENT.

### The War and Aircraft.

Still the theatre of war is enveloped in the fog which has hung over it since the outbreak of hostilities, and we know no more to-day of what is taking place than we did at the start. The dailies are full of reports and rumours. Statements of alleged eye-witnesses of the fighting are telegraphed by special correspondents who are not allowed near the scene of the actual fighting, statements which possibly contain the germs of truth, but which are most of them so inherently improbable that we are perforce compelled to discount and disregard them. In all that we have read since the war began we have been unable to discern a single fact which can be vouched for by a responsible British correspondent as having been seen with his own eyes. All that we can depend upon in the way of news is the information issued by the Official Press Bureau, and that is fragmentary and unsatisfying to a degree.

Not that we have any complaint to make as to that. It is in the truest interests of the nation that we are being kept in the dark. The authorities are taking their own line regarding the giving out of news. We trust them, and are content that things are as they are.

If all this secrecy is being properly observed regarding

the major operations of the war, it is little wonder that we can learn nothing regarding its details. Naturally, we are anxious to know exactly what part is being played by aircraft.

From time to time reports reach us that aeroplanes are doing all that has been expected of them, but we know really nothing. All the information that can be depended upon is to the effect that here and there an aeroplane belonging to one side or the other has succeeded in dropping bombs on this place or the other, generally, so far as can be ascertained, with indifferent success. Of the vaunted Zeppelins of the common enemy we hear literally nothing of a dependable nature. Rumour, ever a lying jade, has it that three of these craft at least have been destroyed in Belgium. A most circumstantial story went the rounds the other day that one of these craft had met its fate at the guns of a British cruiser in the North Sea, but the Admiralty have "no confirmation" of the report! And so it goes on from day to day. We hear much but learn little—and we must be content in the meantime to look upon that as a necessity of the conduct of scientific war.

Although we have no news, there are not wanting indications that the aircraft are making their influence felt. French official statements say that the work of the air service has been excellent, and although we are in the dark as to where the main German concentration is taking place, it is said that, thanks to the efficient scouting of the aeroplanes, the French General Staff are in possession of all they desire to know regarding the massing of the German legions. But, as we say, most of this is mere surmise to which it is as well that we should not pay too much attention. We must simply possess our souls in patience, and await the time when we shall be able, in the full light of certain knowledge, to justly appraise the part that aircraft have played in this greatest of all wars.

Now for a glance at what has happened in connection with our own air service. We shall not give away any official secrets, for the very sufficient reason that we have sought none and know none. Of the movement, of the R.F.C. we may not speak, further than to say that when the time comes for everything to be known the way in which this branch of the Service has worked to the desired end will make a page of reading which will not be the least among the many bright pages that this war will add to the history of the Empire. This much may

be said, that the moment the call came every man was found to be ready and eager for what might befall. Almost every civilian airman in the country at once placed his services unreservedly at the disposal of the Service. In response to the call of the War Office, the cadres of the air service were filled almost instantaneously, and within a week of the outbreak of war it was found necessary to announce that all recruiting for the R.F.C. had been stopped. A magnificent response indeed!

So far as concerns the effect of the war on the aeroplane industry, it has necessarily been good. Every

constructor in the country has as much Government work on hand as he can hope to tackle. Engine builders are working at high pressure to turn out the motors that will be required for new craft and to replace casualties, and, all round, trade prospects are excellent. We had much rather that we were able to write in this strain through any other cause than war, but it is simply our business to chronicle facts—and it is an ill wind that blows no-one any good. Whatever the untoward cause may be, the aeronautical industry just now is enjoying a boom which we sincerely trust and believe will establish it on a firm and permanent basis.



## FINDING ONE'S WAY IN THE AIR BY MEANS OF A GYROSCOPE.

A SUGGESTION.

By V. E. JOHNSON, M.A.

It is already possible to construct a gyroscope which will maintain its axis pointing permanently in one direction within a maximum error of  $2^\circ$ , even under the most unfavourable conditions. This is the first necessary condition for the solution of the problem stated above. The second is that we shall know the true direction in which the aeroplane is travelling with respect to the earth. Now when an aeroplane is travelling through the air the head wind set up by its velocity through the atmosphere will strike the machine according to the angle at which the wind is blowing, relative to the direction in which the flying machine is travelling. A small wind vane so fixed on the aeroplane as to set itself in the stream line of the wind would inform us of this. There is, however, not only the true direction in which the nose of the machine may be pointing to be taken into account, but also the effect of the "drift" wind on the machine, that is, how far the machine drifts sideways owing to the effect of the wind. It would evidently be necessary for the vane to be so constructed as to eliminate this error. Having now attained his course with respect to the ground (supposed invisible, or, like the open sea, without points of reference), the aviator must next know his place or speed, either by means of some special form of speed indicator or from his propeller.

For the purpose of automatic record these various indicators must obviously be connected with a map, of a certain scale, fitted on a revolving drum, whose rate of rotation bears a certain fixed ratio to the speed of the aeroplane. The setting of the gyroscope would be such that a pointer fixed to one end of the undeviating gyro axle would leave a trace on the revolving map, the carrying apparatus of which would be connected with the wind vane in such a manner as to make suitable allowance for the drift of the machine. The trace left would be the actual path of the aeroplane with respect to the ground. In order that there shall be no friction to cause deviation of the gyroscopic axle, the drum should be a copper one and the gyroscopic containing ring provided with a spiked pointer for the use of an electric spark which would pierce the map. The path of the aeroplane is supposed to be made approximately at a fixed height. At present this is only a suggestion of the writer's, but one day ere long undoubtedly it, or something very like it, will be turned into a practical invention. With such a device, flying over the sea or unknown land would be far safer, to say nothing of flying by night.



## THE ROYAL FLYING CORPS.

THE following appointments were announced in the *London Gazette* of the 14th inst. :—

**R.F.C.—Military Wing.**—Appointments to take effect from June 30th, 1914: To be Flying Officers—\*Capt. Arthur B. Burdett, York and Lancaster Regt.; Capt. Cyril F. De S. Murphy, Princess Charlotte of Wales's (Royal Berkshire Regt.); \*Capt. Alexander Ross-Hume, Cameronians (Scottish Rifles); \*Capt. Geoffrey H. Cox, 3rd Batt. Prince of Wales's (North Staffordshire Regt.); \*Lieut. Ian M. Bonham-Carter, Northumberland Fusiliers; \*Lieut. Dudley S. K. Crosbie, Princess Louise's (Argyll and Sutherland Highlanders); \*Lieut. Claud A. G. L. H. Farie, Highland Light Infantry; \*Lieut. Victor S. E. Lindop, Prince of Wales's Leinster Regt. (Royal Canadians); \*Lieut. Lord George Wellesley, Grenadier Guards; Lieut. Charles G. G. Bayly, R.E.; Lieut. Thomas L. S. Holbrow, R.E.; \*Lieut. Arthur S. Barratt, R.A.; \*Lieut. Paul A. Broder, 5th Batt. Worcestershire Regt.; \*Lieut. Guy L. Cruickshank, 3rd Batt. Gordon Highlanders; \*Second Lieut. George J. Malcolm, R.A.; \*Second Lieut. Cuthbert E. C. Rabagliati, King's Own (Yorkshire Light Infantry). To the Reserve—Major Sir Bryan B. M. Leighton, Bt., Westmorland and Cumberland Yeomanry; Capt. Thomas H. C. Frankland, Royal Dublin Fusiliers; Lieut. Frank B. Binney, R.A.

*Supplementary to Regular Corps.*—Second Lieut. (on probation) Eric B. Baumann resigns his commission; August 15th, 1914.

To be Second Lieuts. (on probation), August 15th, 1914.—Cadet Serjt. John G. Miller, from Edinburgh University Contingent O.T.C.; Mark Lawson.

The following appointments were announced in the *London Gazette* of the 18th inst. :—

**R.F.C.—Military Wing.**—Temporary appointments made: August 7th, 1914: Brevet Major Hugh M. Trenchard, C.B., D.S.O., Royal Scots Fusiliers, Asst. Commandant, Central Flying School, to be Officer Commanding, and to be granted the temporary rank of Lieut.-Col. whilst so employed. Capt. Robert Pigot, Rifle Brigade (Prince Consort's Own), a Flying Officer, to be Adjt. Second Lieut. Loftus A. Bryan, South Irish Horse, from the Reserve, to be a Flying Officer, and to be seconded; August 4th, 1914. Lieut. George B. Stopford, R.A., to be appointed to the Reserve; July 8th, 1914.

*Special Reserve of Officers.*—To be Second Lieuts. (on probation): August 15th, 1914. Geoffrey C. Gold, late Harrow School Contingent O.T.C.; Hugh C. Tower, Arthur V. Bettington, William H. Charlesworth, Archie-bald B. Ford, and Edwin L. M. L. Gower.

\* To be seconded.



## THE "ROUND BRITAIN" MACHINES.

THE machine which was officially numbered 3 for the Circuit of Britain was

The Sopwith Bat Boat, to have been piloted by Mr. Pixton. In its general lay out this machine is very similar to the seaplane which was the object of so much admiration at the last Aero Show at Olympia. Several alterations have, however, been effected, as, for instance, the substitution of a 200 h.p. Sunbeam engine for the Salmson Canton-Unné with which the Show machine was fitted.

The wings have also been slightly raised in relation to the hull, so that the lower main plane, instead of resting directly on the gunwales of the boat, as it did in the previous machine, is mounted on short stout struts coming up from the interior of the boat. Joined to these are the four inner inter-plane struts carrying the bearers for the engine—a 200 h.p. Sunbeam of the Vee type—mounted slightly above the centre of the gap between the planes. Of these the upper plane is straight and has a considerable overhang, whilst the lower one is set at a very pronounced dihedral angle, partly, no doubt, to increase the lateral stability of the machine, and partly in order to provide sufficient clearance to allow the machine to roll considerably on the sea without danger of the lower planes touching. The lower planes are further protected by wing tip floats of the cylindrical type.

The inter-plane struts are of ample section, and are made of spruce, with the exception of the inner ones, which, as they take the weight of the engine, have been made of ash. When the machine is in the act of alighting, the weight of the machine is taken by two oblique

on top of the upper tail-booms, in such a manner that its angle of incidence can be varied, is the fixed tail-plane, which has a flat under surface and a slightly cambered top. Hinged to the trailing edge of this stabilizing plane is the divided elevator, and pivoted round the rearmost upright strut in the tail outrigger is the rudder, which is of large area and balanced. It will be noticed that no fixed fin is incorporated in the tail unit, all the vertical surface aft being provided by the rudder. Cross-bracing everywhere between the main planes, as well as in the tail outrigger, is effected by means of stout stranded cables, and all control cables are in duplicate.

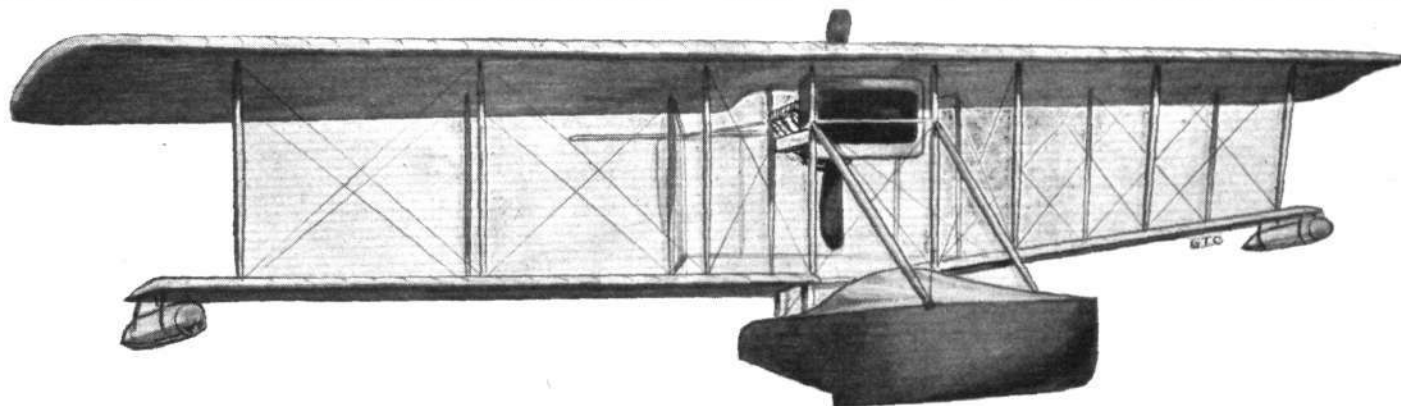
Interesting as the aeroplane portion of the machine undoubtedly is, the hull or boat is even more so, incorporating as it does all the improvements that long experience with this type of craft has suggested to the designers.

Although following fairly closely on the lines of the boat of the last Olympia Show machine, several details have undergone alteration and improvement, making the Sopwith Bat Boat one of the finest examples of seaworthy flying machines in this or any other country.

In the nose the boat is of the displacement type flattening out gradually towards the step, where it is of hydroplane form. Just behind the step the bottom of the rear portion of the boat is slightly V-shaped, running out to a flat bottom at the stern. Constructionally the boat is built up of two skins of mahogany laid on in opposite directions over a strong framework of ash stringers. The front part is provided with a curved deck, which will quickly shed any water that may wash



Mr. C. Howard Pixton, the pilot who was nominated for the Sopwith Bat Boat in the Round Britain Race.



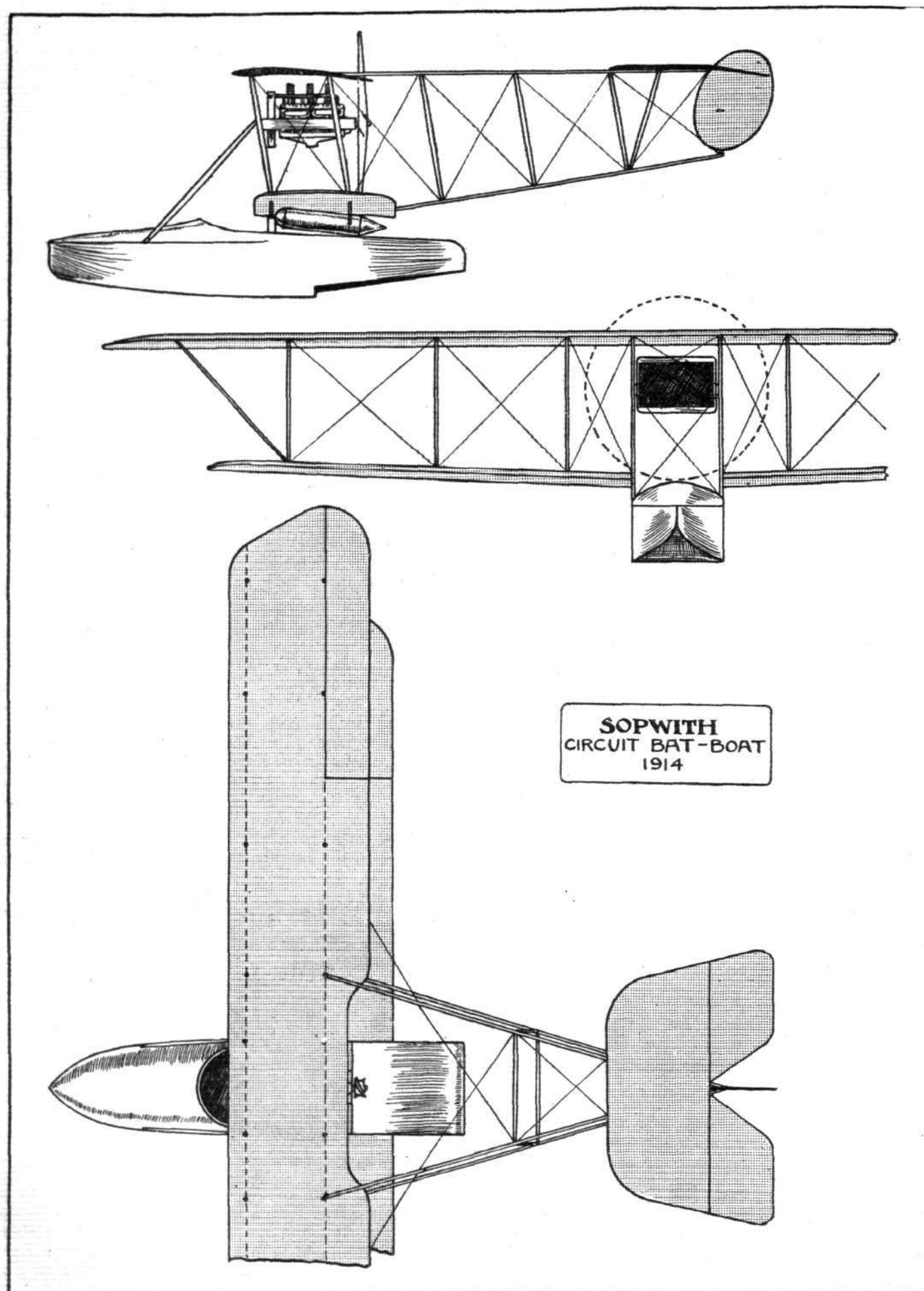
A view of the Round Britain Sopwith Bat Boat.

struts running from the front end of the engine bearers to the forward portion of the boat. As in the Show machine the radiator is mounted between the inner front inter-plane struts.

The tail outrigger, which forms a V, as seen in plan, is made up of four booms of spruce connected vertically and horizontally by struts of the same material. Mounted

over it. In front of the occupants' seats the deck is swept upwards to form a wind screen, which also serves to protect pilot and passenger from water spray when getting off or alighting in a rough sea. The high free-board of the boat further helps to make this an all-weather craft.

One of the numerous difficulties which beset the



THE ROUND BRITAIN SOPWITH BAT BOAT.—Plan, front and side elevations.

designer of hulls or floats of the stepped type is that of admitting air to the step. In the Sopwith Bat Boat this difficulty has been overcome in a most ingenious way by fitting external channels or scoops, screwed to the sides of the boat, thus doing away with the necessity of piercing the bottom as in the case of internal air tubes. As to the efficiency of this arrangement, one can only conclude that it has proved to answer its purpose, since after being thoroughly tested in previous machines it has been retained in this latest product of the Sopwith firm.

From the accompanying illustrations a good idea may be formed of the spacious accommodation for pilot and passenger, whose seats are arranged side by side inside the extremely roomy cockpit, the pilot occupying the right-hand seat. *Ailerons* and elevator are operated by means of a rotatable handwheel mounted on a vertical tube which is free to move in a forward and backward direction. The rudder is actuated by a pivoted foot bar.

## ✱ ✱ ✱ ✱ ✱ AIRCRAFT AND THE WAR.

DURING the past week a large number of incidents in which aeroplanes have played a leading part have been reported, and in several cases they have been mentioned in the *communiqués* issued by the French and Belgian War Offices. German aeroplanes have made several flights over Brussels, but invariably they have kept at a height well outside the range of rifle fire. Little has been heard of the use of Zeppelins, but on the authority of a letter written by a French soldier at the front *Le Journal* states that the French aviator Perrin on the 8th inst., starting from Nancy, brought down and wrecked a Zeppelin by dropping bombs on it at Château-Salins. A fine reconnoitring flight was made by Lieuts. Massaux and Daumerie on the 12th inst. Starting from Namur, they flew along the German lines in the direction of Liège and over Hannut, being up for two hours and covering about 100 miles. They were fired at several times, but returned unhurt to Namur. On the 13th inst. a German machine, painted white, except for the blue panels across the centre of each wing, was circling over the forts at Namur, and although determined efforts were made to bring it down they were of no avail. On the following day, however, the Belgian artillery at Diest were more successful, and three German aeroplanes are said to have been secured, two of the pilots being killed and one terribly injured.

A French official *communiqué* dated the 13th inst. stated that a French aviator, whilst scouting in Lorraine, was pursued by two German aviators, who were mounted in stronger and swifter machines. They also carried three men with repeating rifles. The French aviator, however, regained the lines unhurt.

A German aeroplane, bearing the French flag, the same morning, flew over Vésoul and Lure. It dropped three bombs on the station of Vésoul and then two on that of Lure. The damage done was insignificant.

A sharp fusillade from the gendarmes and soldiers guarding the roads put the aeroplane to flight.

Another *communiqué* issued on the following day said:

"French aviators have achieved numerous successes, one especially brilliant in the Woëvre district. A German aeroplane ventured over troops at a height of over 3,000 ft. Fire was at once opened on it, and the range was speedily found. The aeroplane, struck in the engine, began to heel over. The occupants were seen to try to straighten it, but they did not succeed, and were compelled to descend. They were two officers, and were made prisoners.

Large petrol and oil tanks, the capacity of which are 70 galls. and 7 galls. respectively, or enough for a flight of five hours' duration without replenishments, are fitted. The weight of the machine empty is 2,300 lbs., and with full load, including pilot, passenger, and fuel for five hours, the weight is 3,120 lbs. As the total area is 600 sq. feet, the loading works out 5 lbs. per sq. foot. A speed range of from 48 m.p.h. to 75 m.p.h. is anticipated, so that with five hours' fuel the radius of action is in the neighbourhood of 180 miles. By fitting larger tanks it should be possible, if desired, to increase this figure considerably.

In the event of the Sopwith Bat Boat being, or having already been, taken over by the Admiralty, there is no doubt that she would not only prove an effective addition to our fleet of seaplanes, but that she would also add considerably to the high reputation of the Sopwith Company.

"In another place a French aeroplane the day before encountered a German aeroplane. The French pilot chased the German, firing with a Browning. The German aviator did not reply, but fled."

It was also stated that a German aeroplane had been captured near Bouillon, on the Franco-Belgian frontier, the pilot and the two military observers being wounded.

While flying over Wierick Plain on the 14th inst., a Belgian military aviator had trouble with the motor of his machine, which began to fall. It, however, struck some telegraph wires, and the pilot escaped with slight injuries. Two children were, however, fatally injured, although the message from Antwerp conveying the above news did not state how they were involved. Two German Naval aviators—Lieut. Kleyna and Ensign Fischer—who started from Borkum on the 14th inst. had to land at Schiermonnikoog, one of the West Frisian Islands, where they were disarmed by the Dutch military authorities and sent to the camp near Alkmaar. The German machines were also busy on the Russian frontier, and a message from Vilna describes how a German machine was brought down in the Suwalki Government, the bodies of four German officers being found in it.

Included in the report issued by the Official Press Bureau on Saturday was the following reference to aeroplanes:—"In connection with the operations now in progress on the western frontier of Germany it is learned from official sources that French aeroplanes have obtained several successes. At Woël the Germans threw three bombs amongst the French troops without injury to anyone."

The following details regarding a daring exploit on Friday last by two French pilots are officially supplied by the French War Office:—

"The following details are now to hand regarding the magnificent exploit of our aviators at Metz:—Lieutenant Cesari and Corporal Prudhommeau left on their aeroplanes from Verdun on Friday, at half-past five in the evening, with the object of reconnoitring, and, if possible, destroying, the hangars for dirigibles at Metz. They arrived above the line of forts, the lieutenant flying at a height of 8,800 ft. and the corporal at 7,200 ft.

"In spite of a hail of bullets and shells they continued their course, but shortly before reaching the military manoeuvre ground the motor on the lieutenant's machine failed. Not wishing to fall before executing his mission



he *volplaned*, and while doing so dropped his bomb with marvellous coolness. A few seconds later his motor resumed working. The corporal had also dropped his bomb, but owing to the smoke caused by the fire of the enemy neither could see whether the mark had been hit. They believed, however, that they had been successful. The German artillery kept up a furious fire upon them for ten kilometres, but the aviators returned safe and sound. They have received mention in the army orders of the day."

The Belgian military authorities are responsible for the truth of the following incident:—

"Two Belgian aviators returning to headquarters had to land, owing to a breakdown, in the neighbourhood of some Uhlans. The aviators found they could not repair the machine. So they slipped away and regained the Belgian lines, and the aeroplane was given up as lost. Two days later it was ascertained that it was still at the same place, guarded by Uhlans.

"A party at once set out with an 80 h.p. motor with a quickfirer on it, and dragging a trolley. The party came up to the spot at great speed, and surprised and drove off the Uhlans, afterwards keeping them at bay with the quickfirer, while the aeroplane was dismounted and put on the trolley. The convoy then drove off under the nose of the surprised Germans."

From information to hand subsequently it would appear that the leader of the rescue party was the well-known Belgian motorist and aviator Baron de Caters.

A French *communiqué* issued on Monday afternoon gives the following details of the way in which a Frenchman "bluffed" a German patrol:—

"One of our aviators, running short of petrol, was compelled to land in a village of the annexed territory. He was replenishing his reservoir when a strong German patrol was signalled. The officer continued calmly to empty his petrol tins. The Germans, quite at a loss, halted at a distance of 200 yards without attempting to fire. Possibly they feared some trap. His reservoir full, the aviator set his motor going and flew away. It was only then that the Germans, seeing that they had been tricked, opened fire upon him, but it was too late. The machine and the pilot returned to their centre safely."

On the morning of the 17th inst. a German aeroplane was sighted reconnoitring over Givet, and as a result of rifle fire it fell at Hasufre.

It was reported from Paris on Tuesday on the authority

of M. Paul Doumer, who has returned from the fighting line in Belgium, that three Zeppelins have been destroyed while making reconnaissances in Belgium, while a fourth fell in a forest and was wrecked.

On the 18th, a German aeroplane, flying the French colours, dropped three bombs over Luneville but the damage done was insignificant. On the same day an Austrian machine with an officer and a soldier fell into the Russian hands near Balin Station on the Podolia line. It was also reported from Russian sources that a German aeroplane was destroyed near Samno, and that four German aviators had been killed.

On Tuesday, a message from Copenhagen stated that Zeppelin No. 2 had passed over Boubjerg at a height of between 300 and 400 metres, and proceeding in a northerly direction. On Tuesday Belgian soldiers brought down a German aeroplane at Asterrebeck, while French troops secured another German machine near Dinant. A third German machine fell a victim to rifle fire at Wavre, and it is stated that two of the occupants were killed and one wounded.

During a brief visit to Paris on Tuesday, a French military aviator, who had been on duty in Belgium, stated that he had twice flown from Brussels to Cologne and Coblenz, and although repeatedly fired at he had met with no mishap. The pilots sent for special service to Belgium flew from St. Cyr to Brussels but during the trip they had to keep out of range of rifle fire for fear of being taken for Germans. The pilot, in question, said that he had been fired on several times, and on one occasion a plane was pierced by a bullet.

Several instances have been reported of attempts by German airmen to disguise their machines so as to appear as if French, but mainly on account of the distinctive shapes of the German types these ruses have so far met with failure. Steps have also been taken to render the German airships as invisible as possible by painting the envelopes a grey colour. It is stated that in the early days of the war a German airman ascended after dark and in order to mislead the Belgian marksmen suspended a red lantern about 200 ft. below the machine. This lantern was quickly smashed, but the machine itself was untouched.

In several of the large cities in Germany light guns have been mounted on the top of church steeples to fight aircraft, whilst some refugees from Germany report having seen guns for attacking aircraft mounted on the bridges across the Kiel Canal.



## HANDBOOK OF WIRELESS TELEGRAPHY.

ALTHOUGH the subject-matter of this volume, which is now in its fifth edition, is not directly concerned with the science of aeronautics, it is none the less of importance to readers of *FLIGHT* because of recent developments in the application of wireless apparatus to various forms of aircraft intended for Naval and Military services.

Dr. Erskine Murray has dealt with the subject in an exceedingly lucid and complete manner, using the simplest possible language in so doing, and, unlike most writers of text books, has not confined his attention merely to already well-known material, but has included some work of an original nature, which considerably enhances the value of his book. This has been characteristic of past editions of the book, and the present volume does not fail in this respect, while the most recent information available regarding developments in wireless transmission has been incorporated.

The author first indicates the early attempts that were made to evolve a system of wireless telegraphy, after which the various forms of apparatus used in the production and the detection of high frequency currents are examined. Considerable space and attention is devoted to the explanation of the method of operation of the

already established and suggested systems of wireless telegraphy, including that of Tesla, who proposed utilising the whole world as a conductor by the creation of stationary electric waves on it. The theory of jigs and jiggers and that of the transmission of electrical energy is thoroughly investigated, while those who are engaged in the working of wireless apparatus will derive much useful information from a perusal of the chapter dealing with adjustments, electrical measurements, and fault testing. The efficiency of wireless transmission next receives attention, and a brief account is given of the calculations involved in the design of a wireless station. The book concludes with a number of well-chosen tables and notes regarding matters which are likely to prove of value to those interested in wireless telegraphy; and two appendices are added, giving the service instructions of the Radiotelegraphic Convention and the Marconi Co.'s original specification for Imperial wireless stations.

The book, which is published by Crosby Lockwood and Son, of 5, Broadway, Westminster, at the price of 10s. 6d. net, is well illustrated throughout, and cannot fail to interest and instruct its readers.

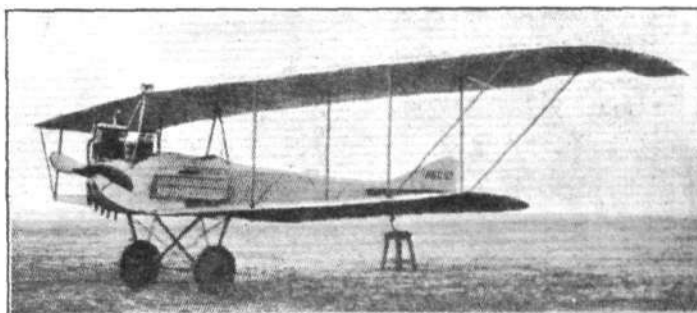
# AIRCRAFT "MADE IN GERMANY"

WHICH MAY BE EMPLOYED AGAINST THE ALLIES.

ALTHOUGH up to the present little information of a reliable character has been allowed to transpire regarding the movements and actual work done by aircraft in the present war, there can be little doubt that the air fleets of allies as well as enemies are and will be playing an important part. In fact it seems already that the efficiency or otherwise of the aerial equipment of the contesting powers will in no small measure influence the final issue. As even approximately accurate figures as to the actual number of machines are naturally not obtainable, we have thought it of considerable interest here to describe briefly the different types of machines either already in use by the German Government or immediately available. From these and a table of dimensions and general characteristics of the machines our readers will be able to form a good idea how the various types of aeroplanes produced in Germany compare with our own. In order to facilitate identification all the machines have been given reference numbers in the table, the illustrations, and the descriptions, which will enable our readers to refer quickly and with the minimum of trouble, the description and particulars in the table corresponding to a given illustration or *vice versa*.

## 1. The Ago-Arrow Biplane

is, as the name implies, of the type deriving its name from the peculiar backward slope of its main planes. When viewed from in front the upper plane is straight,



1. The Ago-Arrow biplane.

whilst the lower one possesses in addition to its backward slope, a comparatively great dihedral angle. The fuselage, which is of rectangular section, tapers toward both ends, the streamline form being further improved by a turtle back in which openings have been cut out for the engine

## AEROPLANES "MADE IN GERMANY."

Reference No.	Make of Machine.	Where Built.	Type.	No. of Seats.	Span (in ft.).	Length (in ft.).	Area (in sq. ft.).	Weight.		Fuel Capacity (hours).	Speed (m.p.h.).	Radius of Action.*	Climbing (3,281 ft. in - mins.).	Engine.	Type.	No. of Cyls.	h.p.	
								Empty.	Loaded.									
					ft. in.	ft. in.		lbs.	lbs.			miles						
1	Ago ...	Johannisthal ...	Arrow T.B. ...	2	45	6 26	2 450	—	—	4	68	136	—	A.+	Vert.	4	150	
2	Ago ...	Johannisthal ...	Racing Mono...	1	29	6 26	3 162	—	—	—	84	—	8	A.	Vert.	4	150	
3	Albatros ...	Johannisthal ...	T.B. ...	2	47	5 26	2 403	1360	1850	4	68	136	8	A.+	Vert.	4	100	
4	Albatros ...	Johannisthal ...	Taube ...	2	50	0 34	0 380	1320	1790	3	64	96	—	M.	Vert.	6	100	
5	A.E.G. ...	Hennigsdorf (Berlin) ...	T.B. ...	2	54	0 35	6 530	—	—	—	62	—	—	N.A.G.	Vert.	4	100	
6	A.E.G. ...	Hennigsdorf (Berlin) ...	Later type ...	2	48	0 32	0 440	1540	2080	4	70	140	—	B.	Vert.	6	110	
7	Aviatik...	Mulhouse ...	T.B. ...	2	45	10 26	2 500	1520	2040	4	62	124	15	A.+	Vert.	4	100	
8	Aviatik ...	Mulhouse ...	Later type ...	2	35	0 24	0 390	900	—	—	—	—	—	O.	R.	9	114	
9	D.F.W. ...	Leipzig ...	Taube ...	2	46	0 37	6 340	1320	1840	4	68	136	—	M.	Vert.	6	100	
10	D.F.W. ...	Leipzig ...	Arrow T.B. ...	2	56	0 29	6 500	1540	2060	4	65	130	—	M.	Vert.	6	100	
11	D.F.W. ...	Leipzig ...	Crescent wings	2	46	0 27	6 430	1425	1945	4	74	148	5	M.	Vert.	6	100	
12	D.F.W. ...	Leipzig ...	Arrow type ...	2	44	0 25	0 450	1500	2240	6	85	255	5½	A.D.	Vert.	6	120	
13	Etrich ...	Liebau ...	Taube ...	2	47	0 32	3 320	1420	1940	4	59	118	—	A.+	Vert.	4	100	
14	Fokker ...	Schwerin ...	Mono. ...	2	36	0 24	0 240	1445	2180	4	71	142	—	A.	Vert.	4	100	
15	Goedecker ...	Mainz ...	Taube ...	2	46	0 36	0 400	1100	1620	4	60	120	—	M.	Vert.	6	100	
16	Gotha ...	Gotha ...	Taube ...	2	47	0 33	6 370	—	—	—	62	—	—	A.+	Vert.	4	100	
17	Gotha ...	Gotha ...	Taube ...	2	46	0 28	0 300	—	—	—	74	—	—	M.	Vert.	6	100	
18	Halberstadt ...	—	Taube ...	2	48	0 30	0 340	1496	2016	4	92	184	—	M.	Vert.	6	100	
19	Hansa ...	—	Taube ...	2	46	0 28	0 308	—	—	—	72	—	—	M.	Vert.	6	100	
20	Harlan ...	Johannisthal ...	Arrow Taube ...	2	47	0 34	9 300	1250	1770	4	62	124	15	A.+	Vert.	4	100	
21	Jatho ...	Hannover ...	Steel Taube ...	2	47	6 39	6 320	1060	1730	7	78	273	—	M.	Vert.	6	100	
22	Jeannin ...	Johannisthal ...	Steel Taube ...	2	42	0 30	0 250	1320	1880	4	75	150	—	A.	Vert.	6	120	
23	Kondor ...	Essen ...	Taube ...	2	46	0 32	2 330	—	—	—	62	—	—	A.+	Vert.	4	100	
24	L.F.G....	Reinickendorf ...	Arrow T.B. ...	2	40	6 26	6 350	—	—	—	62	—	—	A.+	Vert.	4	100	
25	L.V.G. ...	Johannisthal ...	T.B. ...	2	46	0 29	6 550	—	—	—	62	—	—	A.+	Vert.	4	100	
26	L.V.G. ...	Johannisthal ...	T.B. ...	2	50	0 31	0 480	1670	2190	4	65	130	—	M.	Vert.	6	100	
27	Otto ...	Munich ...	P.B. ...	2	49	0 34	6 430	—	—	—	68	—	—	A.+	Vert.	4	100	
28	Roland (L.F.G.)	Reinickendorf ...	Arrow T.B. ...	2	42	6 26	3 430	1380	2150	5	62	155	—	M.	Vert.	6	100	
29	Rumpler ...	Johannisthal ...	Taube ...	2	43	6 32	3 340	880	1400	4	62	124	—	A.+	Vert.	4	100	
30	Rumpler ...	Johannisthal ...	Taube ...	2	46	0 27	0 300	1320	1840	4	74	148	—	M.	Vert.	6	100	
31	Rumpler ...	Johannisthal ...	T.B. ...	2	42	6 —	—	450	—	—	—	—	—	M.	Vert.	6	100	
32	Schwade ...	—	P.B. ...	2	60	0 —	—	500	1012	1532	4	60	120	—	St.	R.	7	80
33	Sommer ...	Berlin ...	Arrow T.B. ...	2	33	0 26	0 350	—	—	—	—	—	—	G.	R.	9	100	
34	Union ...	Berlin ...	Arrow T.B. ...	2	33	0 23	0 350	1210	1845	5	68	170	—	A.D.	Vert.	6	120	

T.B. = Tractor biplane.

Mono. = Monoplane.

P.B. = Propeller or "Pusher" biplane.

A. = Argus.

B. = Benz.

A.D. = Austro-Daimler.

G. = Gnome.

M. = Mercedes.

O. = Oberursel.

St. = Stahlhertz.

Vert. = Vertical.

R. = Rotary.

\* The radius of action given applies to machines fitted with standard tanks and carrying an observer in addition to the pilot. By substituting larger tanks for the observer the radius of action may be greatly increased.

† Also supplied with 100 h.p. 6-cyl. Mercedes.

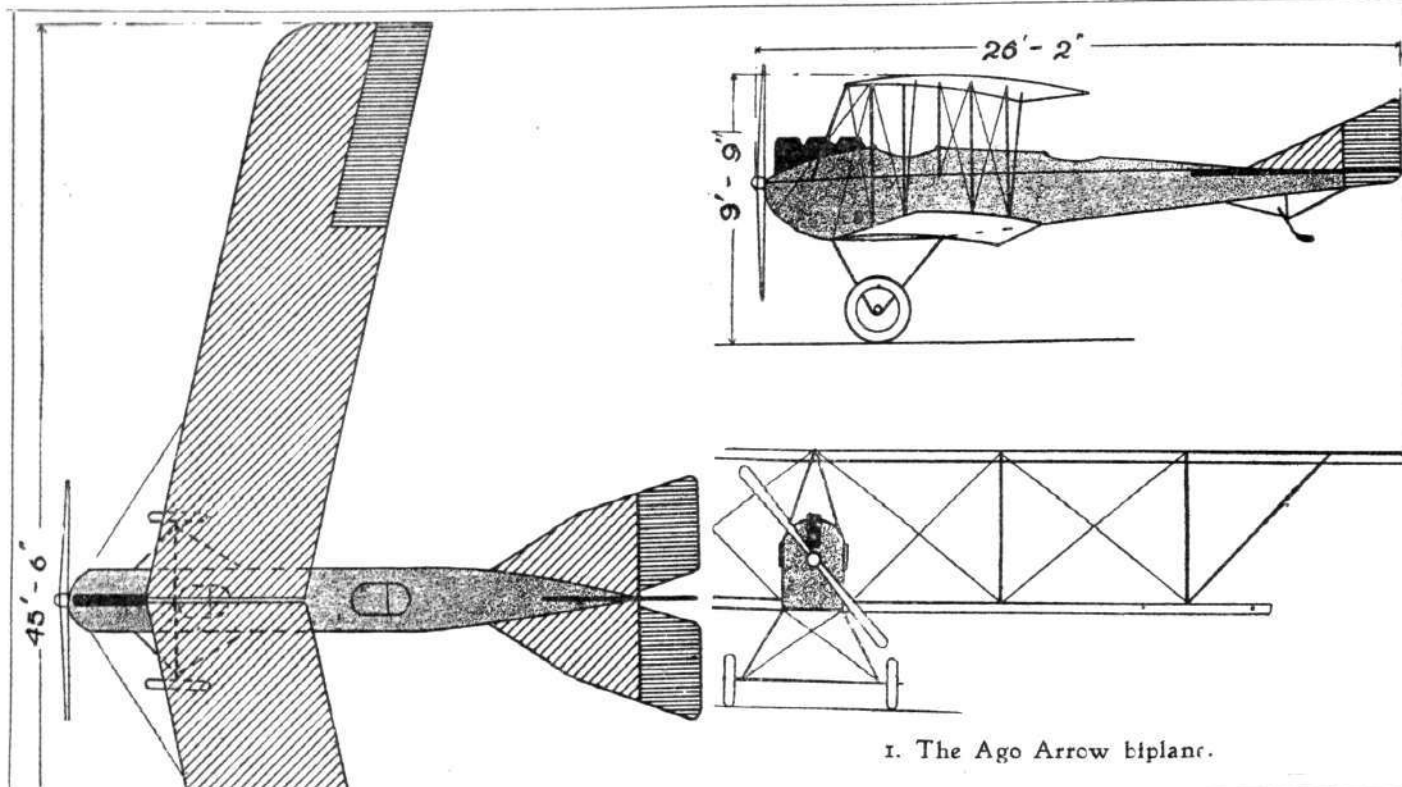


and occupants. The seats are placed very far apart, the pilot's being placed nearly halfway along the *fuselage*, whilst that of the passenger is situated immediately behind the engine. Either a 100 h.p. Mercedes or a 150 h.p. Argus motor may be fitted. With the former the speed of the machine is about 60 and with the latter 68 m.p.h. The chassis is of a type which has attained great popularity in Germany and consists of two pairs of

cables are secured to the top of a similar pylon resting on the upper *longerons* of the *fuselage*.

### 3. The Albatros Biplane

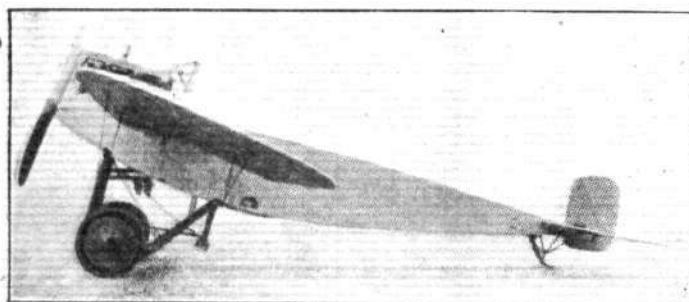
is already familiar to our readers through a detailed description of the machine flown by Thelen at Hendon some time ago. The main planes follow, more or less, orthodox lines, and it is the constructional detail work more than any great originality in the general design that



steel tube struts, each pair of which forms a V as seen from the side. A single tubular axle sprung by rubber shock absorbers and carrying the two disc wheels rests in the angle between the front and rear struts. No skids are incorporated in the chassis, but a small tail skid takes the weight of the tail planes when the machine is at rest.

### 2. The Ago Racing Monoplane

is in some respects reminiscent of the Morane. It is—which is unusual for a German machine—a single-seater but otherwise incorporates many of the features of the



2. The Ago Racing monoplane.

biplane. The rectangular section *fuselage* tapers to a horizontal knife edge at the rear and runs to a point in the nose of the machine where is accommodated the engine—a 150 h.p. Argus. As frequently seen on modern German aeroplanes, the radiator is mounted above the engine. The chassis is of a very simple form and consists essentially of two pairs of tubes bent in the form of a U from which is slung the tubular axle. Wing warping is employed for lateral control, the warp cables being taken to a lower pylon of steel tubes whilst the upper bracing

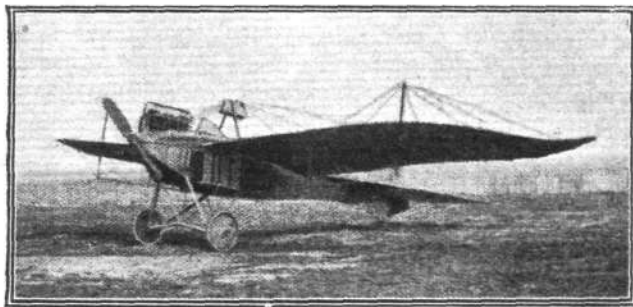
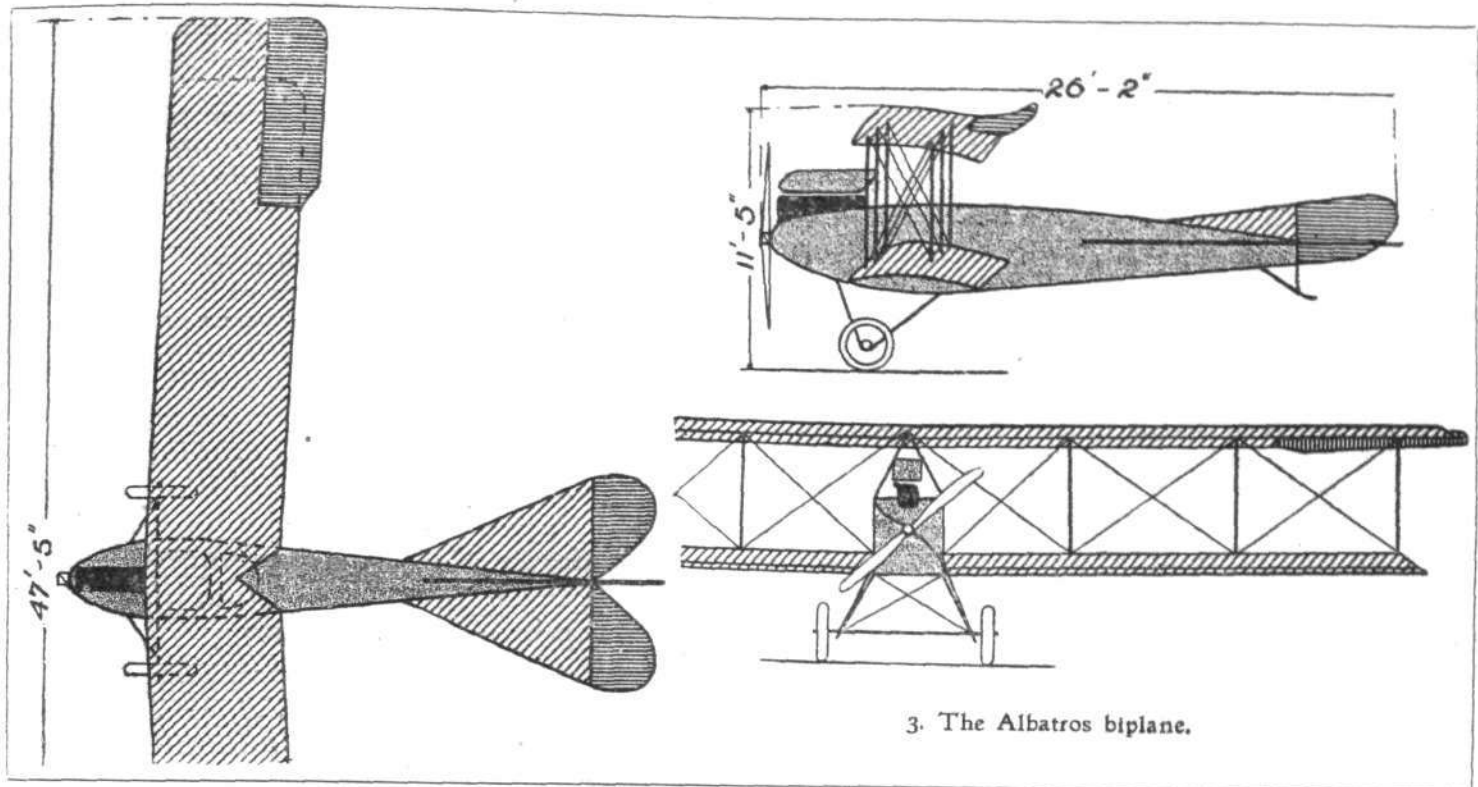
has made these machines so popular among German military pilots. The *fuselage*, which is of rectangular section, is built up without the use of any internal cross-bracing, the necessary rigidity being provided by the three-ply wood covering screwed on to the *longerons* of the *fuselage*. The seats are arranged in tandem, the passengers sitting immediately behind the engine. In the nose the covering round the engine is aluminium



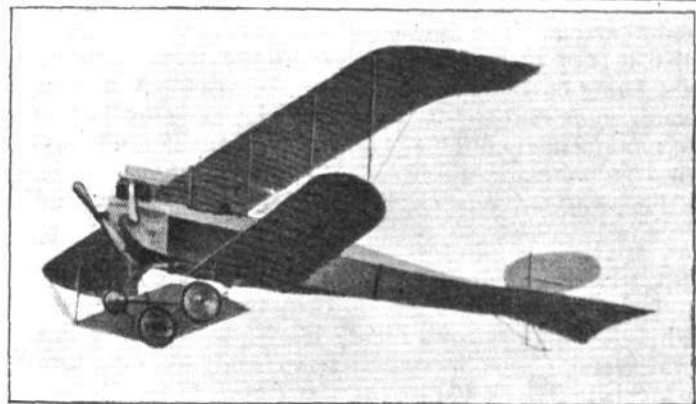
3. The Albatros biplane.

sheeting, and inspection doors on each side give easy access to the interior. The chassis, built of steel throughout, is of a very simple and yet substantial type, without skids, but a small pivoted skid protects the tail planes against contact with the ground. A 100 h.p. Mercedes is fitted, and for ordinary purposes sufficient fuel is carried for a flight of about four hours' duration, although by substituting larger tanks this period can be considerably increased, as shown by some of the recent duration flights made on these machines in Germany.

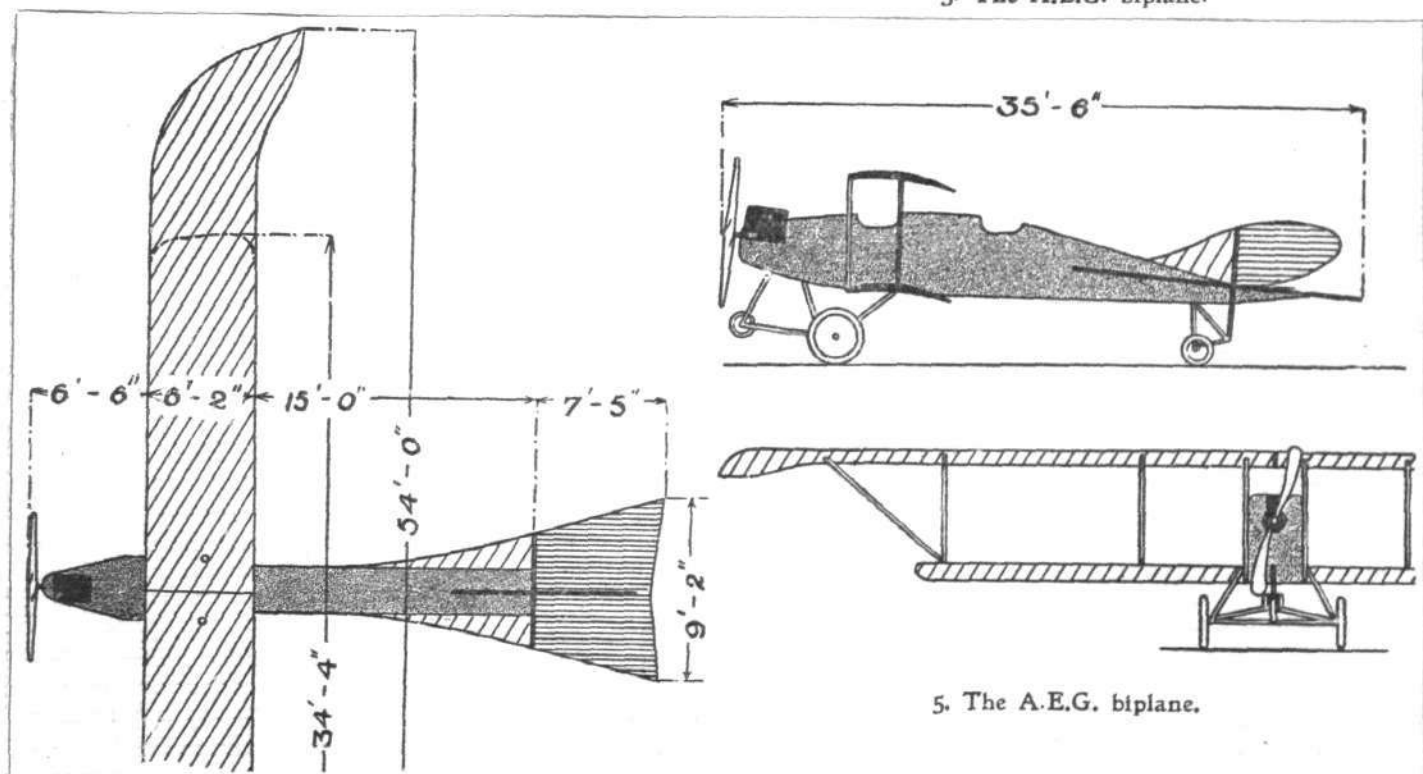




4. The Albatros Taube.



5. The A.E.G. biplane.



## 4. The Albatros Taube

is characterised by a *fuselage* similar to that of the biplane. The wings are of the Taube type having back-swept upturned tips, and there is the usual girder structure forming the lower wing bracing as in nearly all Taube monoplanes. It consists of a steel tube running parallel to the wing spars and placed some distance below the wing to which it is connected by a number of steel tube struts and diagonal cross bracing. Although offering a considerable amount of head resistance this type of construction is employed as it provides a structure of almost equal strength to that of a biplane. The stabilizer and elevator are formed by a single plane the front portion of which is rigidly attached to the *fuselage* whilst the rear part acts as an elevator by being flexed up and down. Steering is effected by means of two rudders, one above and one below the tail plane. Lateral control is maintained by flexing the upturned wing tips. Provision has been made for rapidly folding the wings for purposes of storage or transport. The chassis is similar to that of the biplane, the different parts have been standardised in order to facilitate interchange.

## 5. The A.E.G. Biplane

is characterised by back-swept wing tips, its main planes being straight, as seen in plan. The upper one, which has a considerable overhang, is also straight, as seen from in front, but the lower is set at a pronounced dihedral angle. The *fuselage* of this machine is unusual in that it is of rectangular section in the front portion, whilst being of triangular section at the rear. A flexing elevator somewhat similar to that employed on the Taube type monoplane is fitted. The rudder is situated wholly above the tail plane and is balanced. The chassis is of the three-wheeled type, having two main wheels which



## R.F.C. Double Fatality in France.

It was officially announced by the War Office on Wednesday that Second-Lieut. E. W. C. Perry, of the Royal Flying Corps Special Reserve, and Second Class Air-Mechanic E. G. Parfitt, of the Royal Flying Corps, were killed in an accident in France, on August 16th.

## America Sends Military Experts.

AMONG the passengers on the American liner "St. Paul," which arrived at Liverpool on Saturday, were General Mills and Col. Reber, the latter being the Commandant of the U.S. Army Signal Corps, which includes the aviation section. He has been charged with a mission to report specially upon the use of aeroplanes and airships in the present war.

## Comte de Lesseps Returns to France.

THE liner "Victorian" from Montreal brought home a large number of English and French reservists, and one notable passenger was Comte Jacques de Lesseps, who it may be recalled was the second man to fly across the Channel, which feat he accomplished in May, 1910. He returns to France to offer his services in her defence.

## Further Help by Santos Dumont.

In addition to the offer of his services to the French Government M. Santos Dumont, on hearing that his house at Deauville, which commands a wide stretch of country and is of considerable importance from a military point of view, would be of use to the authorities, at once placed it at the disposition of General Vayssier, the commander at Caen.

## French Airmen Honoured.

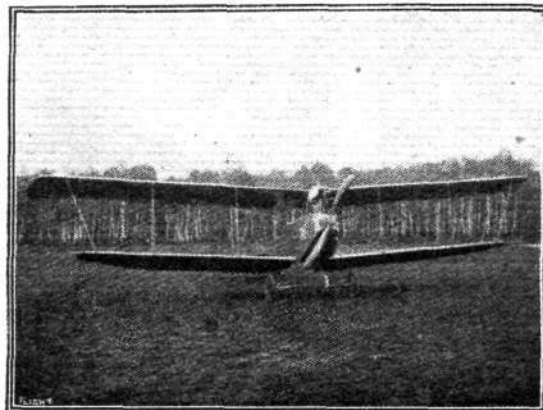
It is officially announced in France that among those who were nominated for the Legion of Honour on

ordinarily take the weight of the machine, and a third mounted on a buffer, which prevents the machine from standing on its nose in case of a bad landing. A 100 h.p. N.A.G. engine is fitted.

The seats are arranged in tandem, the pilot sitting well to the rear, whilst the passenger is situated approximately over the centre of gravity of the machine, so that his presence or absence does not affect the longitudinal stability.

## 6. The New A.E.G. Biplane

differs from the machine described above in that it has no back-swept wing tips. The main planes are straight, as seen in plan, but are set at a very pronounced dihedral



6. The new type: A.E.G. biplane.

angle. For purposes of transport they can be folded flat along the sides of the *fuselage*. The chassis has three wheels, of which the front one, protecting the propeller, is sprung by means of a coil spring on a steel tube sloping backwards to the nose of the *fuselage*.

(To be continued.)



the 7th inst. was M. Goupy, the maker of the aeroplanes bearing his name, while Comte de la Vaulx has been promoted to the rank of Officer in the Order.

## U.S. Prosecute Aerial Photographers.

THE United States Government is taking proceedings under the National Defence Act against the editor of the *Sunset Magazine* for publishing certain photographs of the defences of the Panama Canal. They are also prosecuting the author, the photographer and the aviator, who were connected with the securing of the photographs.

## Lord Carbery in Ireland.

A FINE series of exhibition flights were given by Lord Carbery at Cork on the 2nd and 3rd inst., including looping, steep banking, and tail slides. He went on to Tralee on the 5th inst., where during one of his looping flights he had Capt. Carthew as a passenger. He also flew at Youghal on the 9th inst. The remaining fixtures arranged have been cancelled, as Lord Carbery has offered his services to the Government.

## Flying at Shoreham.

A BOMB-DROPPING contest for prizes offered by Miss Kate Carney was held on the 11th inst., the target being 60 ft. in diameter and the "bombs" 8 oz. in weight. First prize was won by Mr. J. Alcock on the 100 h.p. Sunbeam Maurice Farman biplane, 17½ ft. outside ring, while E. Pashley, on the 50 h.p. Pashley biplane, was second, 28 ft. outside. C. Pashley and F. Hale also competed. On the following days a large number of Government machines landed at the aerodrome en route to various stations. During last week the Pashley Bros. and F. Hale put in a good deal of practice at midnight, flying over sea and land, with passengers.



## FROM THE BRITISH FLYING GROUNDS.

### Royal Aero Club Eastchurch Flying Grounds

LAST week machines going and coming, as before, but details are best left unrecorded.

Monday, several B.E.s. Army Flying Corps made short flights and Transport left for service.

Tuesday, Army B.E.s. left for service.

Wednesday, Thursday, Friday and Saturday very little flying was done, three of Shorts Albatros Blériot being the only machines up. A new Vickers gun machine



Lieut. B. E. Smythies, who, under the tuition of Mr. F. W. Merriam, obtained his *brevet* at the Bristol School, Brooklands.

was received from the makers on Friday and two Shorts sent away by rail on Thursday.

Sunday, one Short machine up. Our airships have been in evidence during the week. The weather has been fine but windy during the week.

### Brighton-Shoreham Aerodrome.

**Pashley Bros. and Hale School.**—Up with instructor: J. Woodhouse, C. Winchester and J. Burton. Circuits and eights alone: E. Roberts, V. Purnell and A. Rutlen. Machines in use: H. Farman, Pashley and Avro biplanes. Instructors for week: C. Pashley and B. F. Hale.

### Brooklands Aerodrome.

**Bristol School.**—Monday, last week, passenger tuition to Mr. Arbuthnot (6), Lieut. Nickerson (4), Mr. Gamwell (5), Mr. Weir (1), Lieut. Douglas, Mr. Collins (1), Mr. Rosher (3). Solos by Lieut. Bagley (5), Mr. Thomson (4), Mr. Weir (3), Lieut. Douglas (5), Mr. Gamwell (1), Mr. Collins (1).

Tuesday, as passengers, Mr. Arbuthnot (4), Lieut. Nickerson (4), Lieut. Levy (4), Lieut. Douglas certificate taken, Mr. Rosher (4). Solos by Lieut. Bagley (4), Mr. Thomson (4), Lieut. Douglas (1), Mr. Gamwell (3), Mr. Collins (3).

Wednesday, passenger tuition to Mr. Arbuthnot (1), Lieut. Nickerson (1), Lieut. Levy (1), Mr. Rosher (1). Solos by Lieut. Bagley (1), Mr. Thomson (1), Mr. Gamwell (1), Mr. Collins (1).

Thursday, as passengers, Mr. Arbuthnot (1), Lieut. Nickerson (1), Lieut. Levy (1), Mr. Rosher (1); too bumpy for solos.

Friday, passenger tuition to Mr. Arbuthnot (1), Lieut. Nickerson (2), Lieut. Levy (1). Solos by Lieut. Bagley (2), Mr. Gamwell (2).

Saturday, as passengers, Mr. Arbuthnot (2), Lieut. Levy (2), Mr. Rosher (1). Solos by Mr. Gamwell (2), Mr. Collins (1), Lieut. Levy (1), Mr. Arbuthnot (1). Certificates taken by Mr. Collins and Mr. Gamwell.

### London Aerodrome, Collindale Avenue, Hendon.

**Grahame-White School.**—Monday last week, Messrs. Stalker, Toolis, Courtney straights with Instructor Lowe, afterwards Mr. Courtney making solo straights. Mr. Crowe rolling with Mr. North. Mr. Palmer solo circuits and Capt. Upton straights with Instructor Weber. Messrs. Carabajal and Easter rolling with Instructor Russell.

Tuesday, Messrs. Greenwood and Carabajal rolling with Instructors Lowe and Russell. Mr. Courtney solo straights. Mr. Crowe rolling with Instructor Winter. Mr. Easter rolling alone and straights with Instructor Lowe. Capt. Upton, Mr. Stalker, Wyles and Lister straights with Instructors Russell, Winter and Lowe, afterwards Capt. Upton and Mr. Wyles solo straights. Mr. Palmer solo circuits.



Capt. H. T. Lumsden, who took his *brevet* at the Vickers Flying School on July 22nd.

Wednesday, Mr. Courtney solo straights and circuits. Mr. Easter straights with Instructor Russell in passenger seat. Mr. Wyles solo straights.

**British Caudron School.**—Monday, last week, too windy for school work.

Tuesday, School out at 4.30 a.m., under the instruction of R. M. Murray. Messrs. Murray and Abbott doing straights on a new machine (35 h.p.). Mr. Prosser, a former pupil, has been making excellent flights on a 45 h.p. Caudron biplane.

Wednesday, School at work under the instruction of R. M. Murray. R. M. Murray test flight (10). Mr. Abbott doing straights. Mr. D. Keith Johnston (new pupil) rolling.

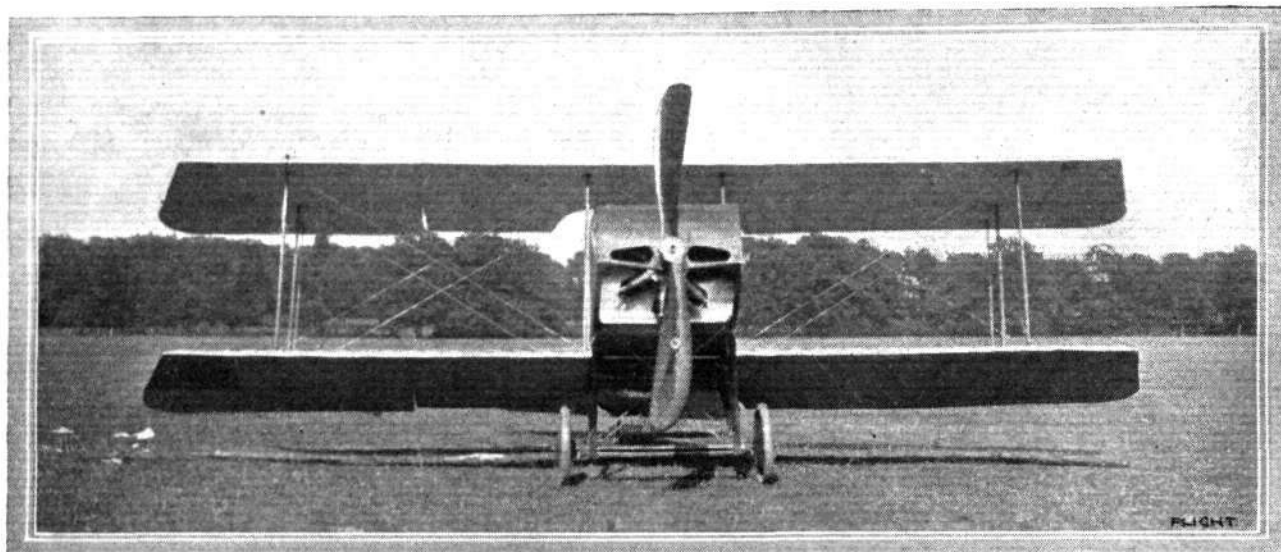
Thursday, R. M. Murray test flight. Too bumpy for school work.

Friday and Saturday too windy for school work.

## THE P.B.IX SCOUTING BIPLANE.

HITHERTO, Mr. Pemberton Billing has confined his attention to the production of seaplanes, but, as mentioned briefly in "Eddies" last week, realising the need at the present time for military biplanes for scouting work, he set to work with commendable enterprise to produce such a machine, capable of being quickly erected and dismantled for transport, and in which the

not differ materially from already existing machines of that type, but its designer has managed to incorporate several cleverly thought out details in the construction. The *fuselage*, which is of rectangular section, is extremely roomy, and tapers to a vertical edge at the rear. The *longerons*, which are of ash, converge towards the nose of the machine (when viewed from the side), where they

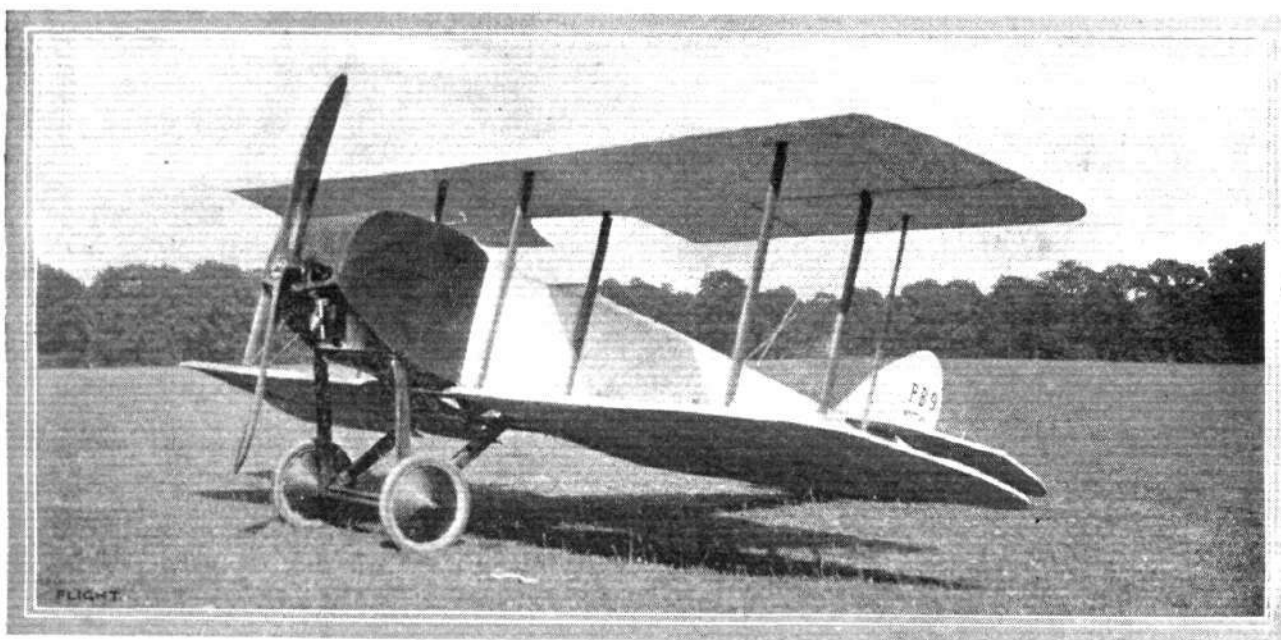


Front view of P.B. IX.

engine might be exchanged for another one of different horse-power in the shortest possible space of time.

In the extraordinarily short period of one week, the designing, construction and finishing of this machine had been completed. The machine would have been put through its trial flights within that time limit but for the fact that there is no suitable ground in close proximity to

are attached to the front engine bearer. As seen in plan, they run parallel up to the pilot's seat, whence they commence to taper gradually towards the rear. As shown in one of the accompanying sketches, the method of joining struts and cross-members to the *longerons* of the *fuselage* is similar to that employed in the Morane monoplanes, and the sketches are self-explanatory.



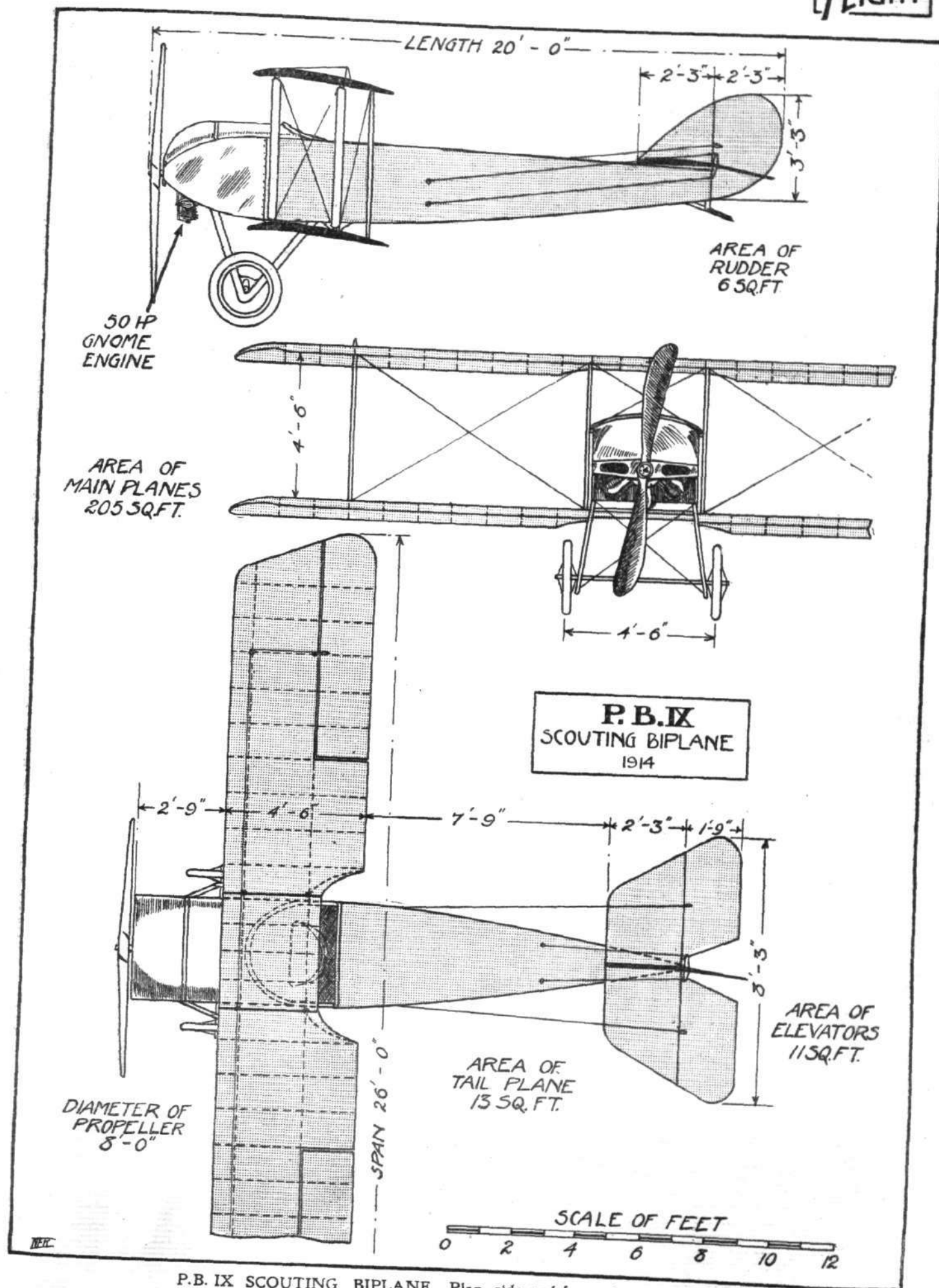
Three-quarter front view of P.B. IX Scout.

the supermarine works of Mr. Pemberton Billing at Southampton. As it was, it was tested in the air within the next two or three days, and came well up to its designer's anticipations.

In its general lay-out the P.B. IX Scouting biplane does

Mounted between double bearings in the nose of the machine is the engine—a 50 h.p. Gnome is at present fitted, but the *fuselage* is wide enough to accommodate an 80 if desired—and to the rear of that inside the aluminium cowl in front of the pilot's seat are the petrol

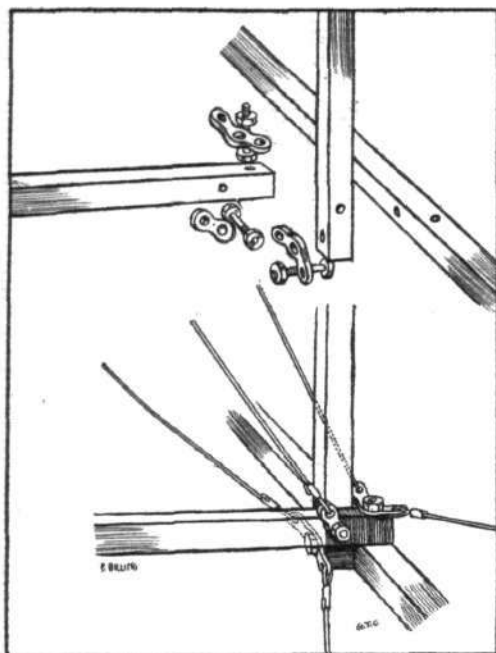




P.B. IX SCOUTING BIPLANE. Plan, side and front elevation to scale.

and oil tanks, which have a capacity sufficient for a three hours' flight.

In its present form the machine is essentially a single-seater, but the roomy cockpit affords ample accommodation should it be desired to fit an extra seat. Control is by means of a hand wheel mounted on a single central tubular column. Behind the pilot's seat is a transverse



"Flight" Copyright.

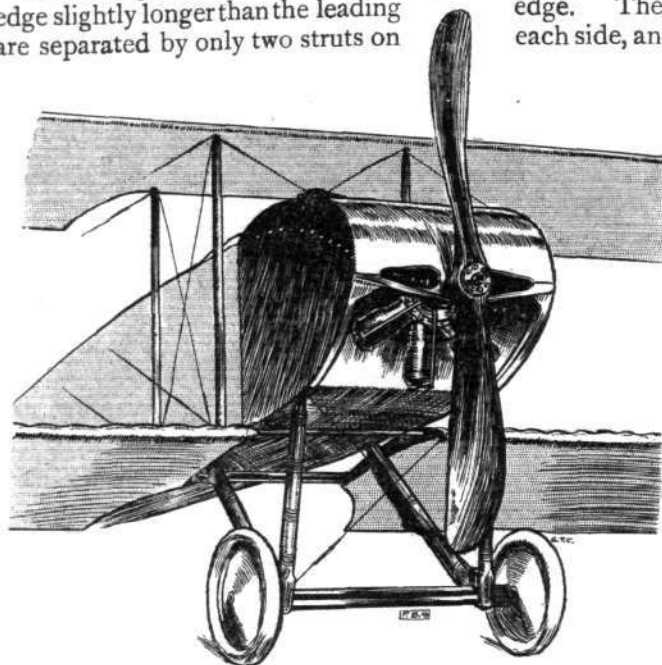
Sketch showing method of joining struts and cross members to fuselage longerons of P.B. IX.

rocking shaft, carrying at its ends crank levers from where cables run to corresponding levers on the elevator. Another steel tube connects the vertical control lever with the lower half of the crank-lever on the transverse-shaft, thus doing away with crossing of the elevator control cables, which might lead to wear and subsequent breakage.

A flat non-lifting tail plane is mounted on top of the fuselage and to it is hinged the divided elevator. Pivoted round the tubular extension of the sternpost of the fuselage is the rudder, and a vertical fixed tail fin is fitted.

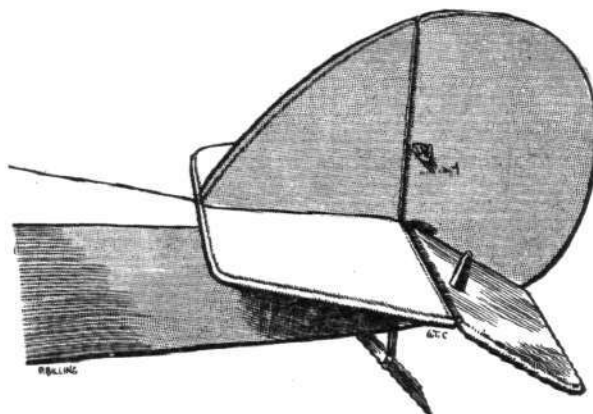
A small sprung tail skid protects the tail plane against contact with the ground.

The main planes are characterised by having their trailing edge slightly longer than the leading edge. They are separated by only two struts on each side, and



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Chassis and engine housing on P.B. IX scouting biplane.



"Flight" Copyright.

Tail planes of P.B. IX scouting biplane.

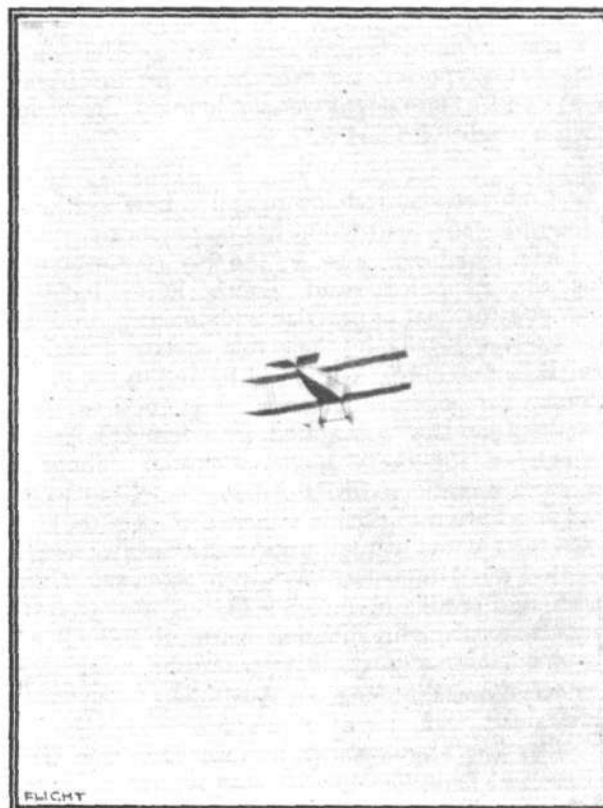


P.B. IX in flight at Southampton.



cross bracing is effected by means of stranded cables. *Ailerons* are fitted to both upper and lower planes, and are inter-connected by a strut running from the under surface of the upper *aileron* to the top of the lower one. They are operated by rotation of the hand wheel, and steering is effected by means of a pivoted foot-bar. Near the *fuselage* the trailing edge has been cut away in order to provide a better view in a downward direction. It is in their attachment to the *fuselage*, however, that the main planes are chiefly interesting. The spars on both planes run right through the wing from tip to tip, those of the lower plane running underneath the *fuselage*, to the lower *longerons* of which they are attached by U-bolts. By undoing these four U-bolts, the wings may be slid over the end of the *fuselage* and laid on top, and the machine is then ready for transport. This method of attaching the wings has the further advantage that should it be desired to fit an engine of a different horse-power and weight, the longitudinal stability of the machine can be corrected by sliding the wings a few inches backwards or forwards along the *fuselage*. This feature should be of considerable merit for military purposes, where an interchange of engines may frequently be desirable. Another reason why the light single-seater scout should be useful for military purposes at present is that there are probably a great number of 50 h.p. Gnoms available, fitted to school machines, which would be of no use as military machines, but the engines of which could with advantage be used in a small fast machine of this class.

The chassis is of simple type, and consists of two "V's" of streamlined wood. The axle works in slots in the angle between the front and rear chassis struts. No skids are fitted. The weight of the machine empty is 560 lbs., and with pilot and three hours' fuel, 750 lbs., or a loading of 3.6 lbs. per square foot. The maximum



Another view of P.B. IX in the air.

speed with a 50 h.p. Gnome is about 75 miles per hour, and the minimum speed just over 30 miles per hour.

During the preliminary trials a few days ago, already mentioned, P.B. IX got off after a very short run, piloted by Mr. V. Mahl, and appeared to climb at the rate of about 500 ft. per minute.

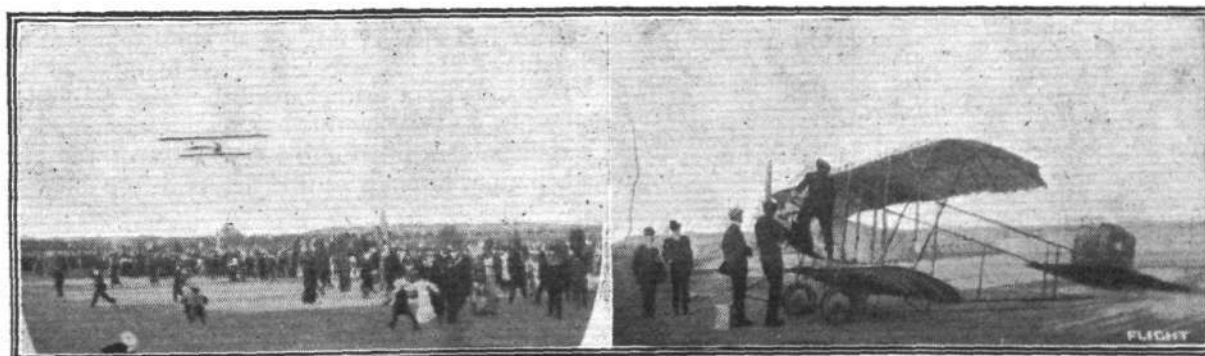
## ✕ ✕ ✕ ✕ EDDIES.

SINCE I referred recently to the doings of Mr. A. W. Jones and his Caudron, in Australia, a further letter is to hand from his manager, Mr. John J. Morgan, which throws some sidelights upon the conditions under which exhibition is carried on down under. From the time the machine arrived in Australia it, up to July 10th, had been erected and dismantled 28 times, while it had travelled 24,200 miles by rail and 21,000 miles by boat. On June 29th, Mr. Jones made some flights at Boulder, W.A., by permission of the Colonial Secretary, and 25 per cent. of the proceeds went to enrich the "Worn-

Out Miners' Fund." He flew to Boulder from Kalgoorlie racecourse, passing over the gold mines *en route*, and afterwards returned to Kalgoorlie. After giving exhibition flights in North Queensland Mr. Jones proposes to fit a 50 h.p. Gnome in his machine and attempt to fly from Melbourne to Sydney.

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Writing of Australia reminds me that good accounts are to hand of some fine flying by Lieut. Eric Harrison, who, it will be recalled, is in charge of the Government's flying school at Point Cook. In one flight he went up



MR. A. W. JONES IN AUSTRALIA.—On the left, flying his Caudron at Kalgoorlie Race Course, June 15th; on the right at Boulder Race Course, June 29th. In both photos. the gold mines are seen in the background. In the right-hand photo. Mr. Jones is just re-filling his tanks.

on one of the B.E.s. (Bristol-built) to over 5,000 ft., and flew with Major Reynolds, a member of the General Staff, fifteen miles across the bay to Melbourne, a landing being effected on the shores of the lagoon in Albert Park. During the return journey the machine reached a height of 6,000 ft.

x x x

The Commonwealth flying school is now getting into working order and instruction has commenced in earnest. Both Lieut. Harrison—who, by the way, is now numbered among the Benedicts—and Lieut. Petre have been getting a great deal of practice and making good names for themselves locally by their fine, steady flying. The Bristol B.E. machines, in spite of having to rough it in a temporary garage, have given a very good account of themselves, and two corrugated iron hangars have now been erected for their accommodation. There were some 300 applications for the first course, but as those undergoing tuition must be either members or join the defence forces, this will reduce the number. There is no doubt that the demonstrations given by Hawker on the Sopwith and Guillaux on the Blériot and the Henry Farman waterplane in different parts of the Commonwealth have done a great deal to arouse enthusiasm in things aeronautical among our Australian cousins.

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Since leaving Hendon with his Handley-Page biplane, Mr. Rowland Ding has now covered no less than 10,000 miles, practically all cross-country work, and has taken up, during his flying, 200 passengers, at Harrogate alone his record being 78 passengers. During the whole of his flying, with but one exception, the Handley-Page has never been anywhere except *via* the air, approximating as near as possible to regular touring work. The only exception was when Mr. Ding had a slight smash at Northallerton, when the machine was put on the train and returned to the works for repair.

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Combined with his flying, Mr. Ding takes considerable interest in photography, and he has become quite expert



Messrs. B. C. Hucks and Marcus D. Manton, snapped at Norwich upon their visit there, when splendid exhibitions of looping the loop were given.

in getting photographs taken when in the air. He arranges to shut off the engine when making the exposure so that the negatives are perfectly clear owing to entire absence of vibration. In association with Mr. Rowland Ding in the Northern Aircraft Company, as one of the directors, is Mr. Reginald Lord, he taking the actual active side in the working of the company. Mr. Lord was the first passenger that Mr. Rowland Ding took up after he was proficient, and having now succumbed to the fascination of flying he has joined the Beatty School at Hendon preliminary to qualifying for his "ticket."

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There have been a lot of German spy stories about lately and also many "unconfirmed rumours," but whether the following spy incident is one of the latter I am not certain. It is said that a certain person informed the police that he had a German lodger whom he not only believed to be a spy but who had an infernal machine in his room. The police thereupon acted promptly, arrested the "spy," cleared everybody from the house out of danger, and bravely put the infernal machine under water. The "spy" was none other than George Prensier, and his "bomb" was his very ingenious life-saving parachute apparatus, described in FLIGHT not so long ago! Well, it might have been worse. How it all ended I have not yet heard.

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It was a pleasant surprise to meet Mr. Manton at Hendon on Saturday last, and to learn that he has been appointed chief instructor at the Grahame-White School at the Aerodrome. With his long experience of school work in addition to being an excellent pilot, Mr. Manton has the further advantage of knowing the G.W. School machines from A to Z, having piloted each of them at one time or another. With so capable an instructor, with the number of machines at the disposal of pupils and the facilities for repairs at the Grahame-White works this school should be busier than ever.

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Although the amount of exhibition flying now taking place at Hendon is not very great, the occupants of the long rows of sheds are by no means idle. On the contrary, the "life" of the place is more pronounced than ever. At the Grahame-White works the men are hard at it building school 'buses and making spare parts. The "Circuit" G.W. machine has been repaired, and is only waiting for an engine, but as 100 h.p. Gnoms are more or less a premium just at present, it may be some little time before the machine can take the air again.

x x x

The Aircraft Co. are turning out Maurice and Henry Farmans at the rate of . . . (here the Censor seems to have put his foot down) a day. Anyway, they are putting them together as fast as is consistent with the high standard of workmanship always maintained by this firm. Incidentally, I gather that the new machine designed by Mr. de Havilland is progressing rapidly, and we may anticipate seeing this new product of the Aircraft Co. being put through its trial flights before long.

x x x

In one of the sheds formerly occupied by Blériots Mr. "Helmet" Warren has installed himself, and is busily engaged on the construction of two machines of the Caudron type. Later on, he intends to build a fuselage biplane of somewhat novel design. Several 35 h.p. Anzani engines and a 70 h.p. Gnome are ready for installing upon the completion of the machines,



whilst a couple more engines had to be left in the cellar of an hotel in France, presumably disguised under the cloak of some Château vintage.

x x x

At the Caudron School an excellent selection of biplanes is at the disposal of pupils. The little Caudron monoplane in which Ewen crossed the Channel has been erected and fitted with a 35 h.p. Anzani engine. This should prove a very serviceable unit for pupils who are out to obtain experience on a monoplane in addition to training on the biplanes.

x x x

In one of the top sheds I found Beatty bending busily over a Wright wing that was being re-covered. What with the brace of 2-seater Wright biplanes, the little single seater 50 Gnome-Wright and the Handley-Page monoplane, pupils joining this school have an opportunity of gaining some varied experience.

x x x

The little Martinsyde scouting biplane to which reference was made some time ago is now nearing completion, and is expected to be out in about a week's time. Her appearance gives great promise of some fine performances, for although she is the first of her type to be turned out by the Martinsyde firm, their experience with other models has furnished them with valuable information which has been successfully applied in the design of this their latest product.

x x x

Mr. W. L. Brock, whose great performances in the Aerial Derby, the London-Manchester-London and the London-Paris-London races stamped him as in the very front rank of cross-country pilots, has now returned to his native land, the United States, where I hear he has been given an important Government commission.

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## THE TURNING CIRCLE OF AN AEROPLANE.

WHEN a mass travels on a circular path, centrifugal force tends to make it move off at a tangent. Its circular path is maintained only so long as there is a centripetal force to oppose the centrifugal force; and this centripetal force is provided in an aeroplane by banking the machine at the turn so as to tilt the wing pressure towards the centre of the turning circle.

When thus tilted, the wind pressure on the wings provides a centripetal force acting towards the centre of the turning circle as well as a vertical force supporting the machine in flight. But, if the total pressure on the wings is no greater than it was when the machine was flying on a straight level path, the vertical lifting force when the machine is banked will be inadequate entirely to prevent the gradual descent of the machine. In short, it will no longer be equal to the weight of the machine.

It is fundamental, therefore, that either the aeroplane must descend while turning, or else be in a position to increase the power output from its engine, so as to fly faster or at a coarser angle, in order to augment its wing pressure sufficiently to maintain the complete support of the machine as well as the centripetal force required for turning.

If the aeroplane is banked to  $45^\circ$ , and has sufficient reserve power to keep on the same level while turning, then there is a centripetal force equal to the weight of the machine.

The centrifugal force is, by first principles, equal to the centripetal force, and, therefore, also equal to the weight of the machine.

The fundamental formula for centrifugal force is  $F = \frac{Wv^2}{gr}$ , where

$F$  = force,  $W$  = weight,  $v$  = linear velocity,  $g$  = gravity, and  $r$  = radius.

For the case in question we can find the radius of the turning circle by writing  $F = \frac{Wv^2}{gr} = W$ ; whence  $r = \frac{v^2}{g}$ .

The interesting point about the solution to this problem, which in general is applicable to any other angle of bank, is that the radius

During his several visits to these shores he has made many friends, and although he will be greatly missed over here, it is gratifying to hear that his achievements have been recognised in the high quarters of "home waters."

x x x

Mrs. Jas. V. Martin, who, it will be recalled, learnt to fly—as Miss Lilian Irvine—at Hendon, before marrying her instructor, and going with him to the States, has been distinguishing herself on a Benoist flying boat recently. On the 23rd ult. she flew with a passenger from Cedar Point, Sandusky, O., to Cleveland, a distance of 74 miles, in 60 mins.

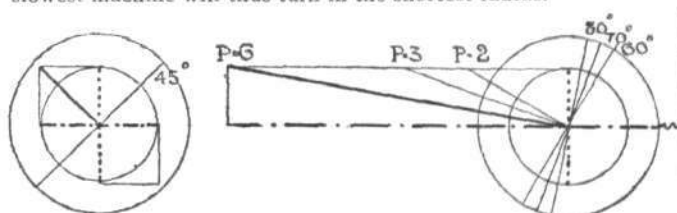
x x x

As briefly recorded in "Eddies" last week, the Scouting biplane P.B. IX constructed at the supermarine works of Mr. Pemberton-Billing, Southampton, was ready for flight on Tuesday of last week. On Wednesday (just over a week after beginning the actual construction), the seven day 'bus, as the machine has been nicknamed, was taken out to a small field in the vicinity, and Mr. V. Mahl, the well-known Sopwith pilot, climbed into the seat. The propeller was swung round when the engine started immediately. After a very short run along the ground Mr. Mahl took the machine up and commenced a steeply-banked left-hand turn, ascending all the while. The rate of climbing seemed to be in the neighbourhood of 500 ft. per min. and the speed about 75 m.p.h. After carrying out all sorts of evolutions Mr. Mahl landed again at a speed of just over 30 m.p.h. Altogether he was very pleased with the 'bus and her little ways—her steadiness he found exceptionally good and he was immediately at his ease in flying her—which spells another fine achievement for Mr. Pemberton-Billing, to whom congratulations.

"ÆOLUS."

corresponding to a given degree of banking increases as the square of the speed.

Of a series of aeroplanes all banked to the same amount, the slowest machine will thus turn in the shortest radius.



"Flight" Copyright.

Diagrams illustrating the forces that steer an aeroplane when it is banked. It is here assumed that the machine has sufficient reserve power to continue its turn on the same level.

In the above example, if the machine is flying at 68 miles an hour—or, roughly, 100 ft. a second—the radius for a  $45^\circ$  bank is about 315 ft.

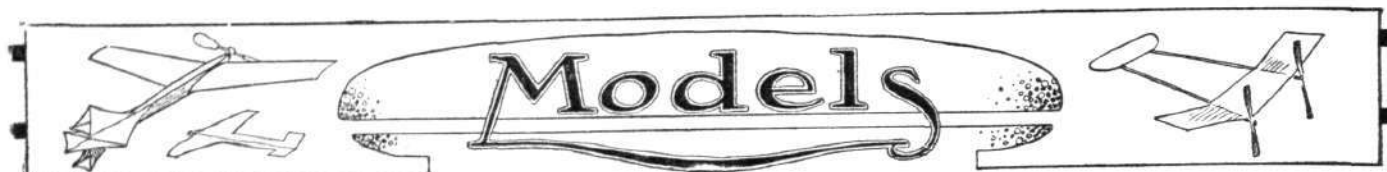
The diagram on the right shows the wing pressures required for various excessive banks that are required to maintain a machine on a constant level while turning.

It will be observed that the radius of the turning circle is only dependent on the wing loading in so far as that function is expressed in the flight speed.

Inasmuch as the centripetal force for any banked turn executed without increase of wing pressure (and, therefore, on a descending spiral) may be written  $F = W \sin \theta$ , where  $\theta$  is the angle of bank from the vertical and  $W$  is the weight in flight, the radius for any

such turn becomes  $r = \frac{v^2}{g \sin \theta}$ .





Edited by V. E. JOHNSON, M.A.

### Model Workers and the War.

THE stupendous war which has burst upon us with the suddenness of a summer thunder-shower has already caused every thoughtful person furiously to think. The less thoughtful, if they have not already done so, will be compelled to do so ere long. It may appear at first sight that there is but little, if any, connection between the tremendous issues now at stake and model work in any form or field. This illusion must, however, be quickly dispelled if one takes the trouble to examine the matter at all closely with an unbiased mind. Warfare of every kind, no matter where carried on, has, at the present day, become such a science, that given opposing forces of anything like equal numbers and equal morale and training, well supplied with provisions, the victory must in the end go to the one the best equipped and provided with the most up-to-date and efficient weapons.

If your rifles can carry 300 yards farther, your ships sail 2 knots an hour faster, or your flying machines travel 10 miles an hour quicker or climb higher and more speedily than those of your adversary, then you have him at a disadvantage. Such a comparison as the above could be extended indefinitely in any direction.

It is the little things that count in war as well as the big; they have had a habit in the past, as they undoubtedly will do in the present case, of accumulating and becoming perhaps the preponderating factor.

Into modern warfare has been pressed every possible discovery of modern science and invention which has been so fortunate as to catch the approval of those in authority. Now it is in this stage, *i.e.*, the initial stage, where the model and model worker does or should come in. He undoubtedly does so, but not to anything like the extent that he either should or might. When aviation first burst on an astonished world and aeronautical papers and journals came, if not into being, at any rate into the public ken, such papers contained many and many accounts of aeronautical inventions in model form. Many of these time has shown to be useless, not to say even absurd. A few have become of great value; some good ones were lost (lost, that is, so far as actual benefit to the inventor is concerned) and have been re-invented and incorporated into present-day machines, either at home or abroad. Some, possibly a fair number, were exploited (against the views of experts), and found useless. Money was lost in consequence, of course, and later on inventors found it more and more difficult to get their ideas taken up. In the meantime the model was taken up commercially and developed, as a toy. Enormous quantities were sold, some good, some indifferent and some so bad that polite language cannot designate them. This enterprise and commercial rivalry, to say nothing of the model competitions which began to be arranged, quickly led to the improvement of the toy-model to a most remarkable extent, especially around London. It is probably not too much to say that the rubber-driven toy-model is at the present day as near perfection as human ingenuity can make it. The writer has been present at most of the principal aero-model competitions from the very first. There was an earnestness of purpose and a full belief in the practical utility of their experiments in these earlier meetings which grew less and less as time went on. With the earlier aeromodellist "sport" was only a means to an end and not the end itself.

There is a vast difference between these two aims, and at no time in the history of a nation is the contrast between them so marked as

in a national crisis like the present—a crisis compared to which the South African one can only be called a mere fleabite. One fact which has been much impressed upon the writer with each succeeding Royal Aero Show that he has visited is the corresponding lesser amount of originality there exhibited in the model section. The first show contained some terrible freaks undoubtedly, but you will never have ideas without freaks, and it is ideas in model invention form that are wanted, and not dozens of so-called models as nearly alike as a couple of peas. From a true modellist's or inventor's point of view, as soon as a thing becomes stereotyped, or even when it is seen to be approaching such a state, it is useless. As a national asset of either offence or defence, unless it is such that it can be *directly* used like a rifle, for instance, in war, it is useless also.

At the present time everyone is anxious to do anything that he can to help, but it must not be forgotten that however urgent present help may be, no less earnest and strenuous assistance will be required in the future. As to the exact part which aircraft is or will be playing in the present war we know but little. One fact alone excepted, and that is, that it is undoubtedly doing most valuable reconnaissance work. Possibly, the aircraft of to-day are not yet sufficiently developed to play any other rôle—a rôle, *i.e.*, of anything like a deciding factor. But, in any case, we shall learn much, very much in fact, not only as to the actualities, but also with respect to the potentialities of aircraft in aerial warfare. From a careful study of such the model worker and inventor should learn in what direction to strike out, in order to make our aircraft machines of still greater efficiency and destructiveness.

The writer cannot hold the sanguine views expressed by Mr. H. G. Wells that this is the war which will end war. At the same time it does not appear an extravagant view to hold that warfare, especially aerial warfare, can be made of so terrible an aspect that no nation will dare to indulge in it, always provided, of course, that nations of approximately equal power are equally well prepared. In this preparation we must be second to none, and here as elsewhere the inventor and model worker can play his allotted part, but "sport" as sport must go, and pleasure, luxury and ease must be given up for study and scientific experiments, coupled with a deadly earnestness of purpose and a determination to pursue any matter we have in hand right through to the bitter end.

We must not forget that the present crisis has arisen at a moment most opportune in many respects for this country; next time, what right have we to expect that we should be so fortunate?

In conclusion, at the present time, let any model worker or inventor at work on any really practical design or idea for use in aerial or any other mode of warfare work at it for all he is worth.

Needless to add, any assistance which lies in our power to give, will be given with the greatest pleasure and utmost secrecy.

### Model Aeroplanes at the Bristol Exhibition.

Writing with respect to the above, Mr. R. V. Tivy (Hon. Sec., Bristol and West of England Aero Club, Model Section), says: "From a technical point of view the awards were most satisfactory, and I think they will give an impetus to the construction of really useful machines. The competition was advertised in all the papers in the South and West of England, and the experiment of making model flying a business proposition has been properly tried and has not been found successful. This was very largely due to the cancel-

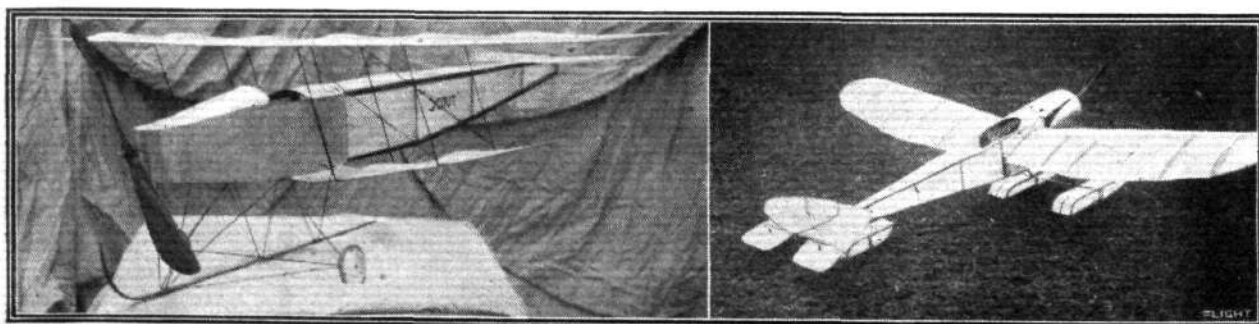


Photo. by Mr. J. F. R. Kitchen.  
A military scout biplane model constructed by  
Mr. R. T. Housé

Mr. L. H. Slatter's new power-driven hydro-aeroplane  
model, a really excellent piece of workmanship and design.

ling of excursions, the date selected being the Saturday before Bank Holiday, and to the abnormally bad weather. It is not likely that we shall repeat the experiment.

"I quite agree with your remarks on the subject of competitions. Too many competitions are held, and no one seems to take the trouble to consider what effect the competitions are going to have on the development and status of model flying. I am glad to say that we have now a number of members who are interested in research work, and for these members we shall make it our business to cater without worrying about the men who are only energetic enough to build elementary machines for duration and other useless competitions."

Mr. Tivy also forwards us the following account and accompanying photos. of the models and competition, which undoubtedly reflect the greatest credit on both the organisers and competitors, and we certainly think that all such endeavours should be given every encouragement:—

"The Summer Model Aeroplane Competition was held at the Bristol International Exhibition on Saturday, August 1st.

"A feature of this year's competition was the introduction of a marking system as a basis on which to make awards in two of the events. Details of this system were published in *FLIGHT* on June 12th and 19th, and on July 24th. Points were awarded by a number of judges for design, construction, and various desirable flying qualities. The models were required to fly a qualifying distance, but no account was taken of the factor of 'duration,' which has produced the miserable type of model aeroplane with which model flying is still, unfortunately, associated.

"The models were exhibited in the International Pavilion during the week, when they excited a considerable amount of interest. The flying models comprised: Single-screw machines—8 tractor monoplanes, 1 tractor biplane, 3 canard monoplanes, 1 tail-type monoplane; twin-screw machines—15 canard monoplanes, 3 tail-type monoplanes. The visitors were especially pleased with a large steam-driven Coanda 'Bristol' monoplane of 6 ft. 6 ins. span exhibited in the Loan Section by Mr. G. W. Legge. The more elaborate of the rubber-driven scale models also came in for a fair share of attention, and several of these machines were of really feasible design and sound construction. Mr. L. J. Clark exhibited a Blériot machine cleverly constructed of piano wire. Mr. R. C. Cross, of the Bath and Somerset Aero Club, sent in a well-built single-screw canard monoplane (No. 16) of an unconventional design. After some preliminary tuning up this machine made several excellent flights in the flying contests (see photograph). Mr. R. T. Howse exhibited a Military Scout biplane (No. 11) of very pleasing lines and exceptionally fine workmanship (see photograph). One of Mr. Smallcombe's machines (No. 4, see photograph) deserves special mention. The wings were cleverly constructed on the design of a rook's wing and tipped with flexible feathers with the idea of investigating the stability attributable to such a formation. It is very gratifying that such an interesting experimental machine should have won the first prize in the event for single-screw machines, and the result of further tests will be awaited with interest. Mr. J. E. Gordon Stephens entered a very practicable Military "Parasol" monoplane with enclosed fuselage. All of the above machines were driven by geared rubber motors. Mr. N. Gordon Stephens entered several machines, including an Etrich tractor monoplane. Mr. R. V. Tivy, the Secretary of the Meeting, exhibited his "Weiss" mono-

plane, which has been rebuilt with wings of 5 ft. span and fitted with a geared rubber motor in place of the steam engine, which would not run satisfactorily in an enclosed fuselage.

"The models were arranged on the stand in classes, i.e., tractor monoplanes, tractor biplanes, &c., and the information in the official programme was supplemented by means of typewritten show cards giving the points of interest of the machines. The models were in charge of an attendant, and the visitors were not allowed to touch the exhibits on the stands.

"The flying contests were marred by showers of rain, which interfered with the flying and kept down the 'gate,' the flying being eventually witnessed only by some 250 damp but interested spectators. The flying space was very restricted, but most of the

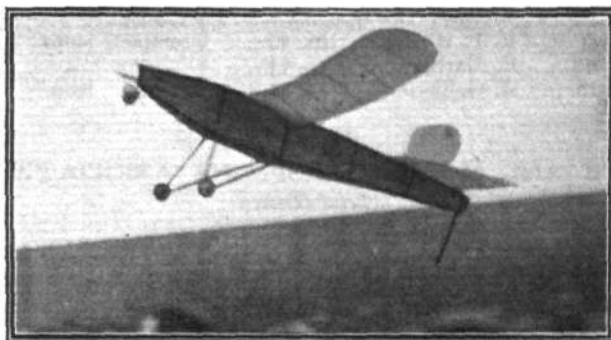


Photo. by Messrs. Knighton and Cutts.

Single screw canard monoplane model constructed by Mr. R. C. Cross.

models gave a very good account of themselves, and upwards of 120 flights were made in as many minutes (the contests starting and ending punctually). In the hands of the judges—Major Boileau and Messrs. R. M. Haines, P. A. Thompson and R. V. Tivy—all Official Observers, the marking system gave most satisfactory results, and the encouragement which this system has given to the building of feasible model aeroplanes on this and a previous occasion amply justifies its adoption. The target contest was won by Mr. S. H. Baker, of the Bath and Somerset Aero Club, with an excellent straight flight terminating within the small target. The looping-the-loop contest excited great interest and afforded a very fine spectacular display, being won eventually by Mr. Howse with five very clean loops. Mr. A. G. Botterill, of the Riverside Model Aero Club, gave a wonderful display of catastrophic evolutions.

"Mr. N. Gordon Stephens officiated as Marshal, and Messrs. H. W. Frampton and A. Winfield (of the International Exhibition) as stewards, and to the energy of these officials and the judges the success of the competition was largely due. The results of the four events are given below:—

"The Summer Model Aeroplane Exhibition and Competition, 1914.

"EVENT A.—Contest for Single Screw Models.

1st ...	W. A. Smallcombe ...	No. 4 ...	77 per cent.
2nd ...	R. T. Howse ...	11 ...	72 "
3rd ...	J. B. Allen ...	1 ...	52 "
4th ...	A. E. Pearse ...	15 ...	51½ "

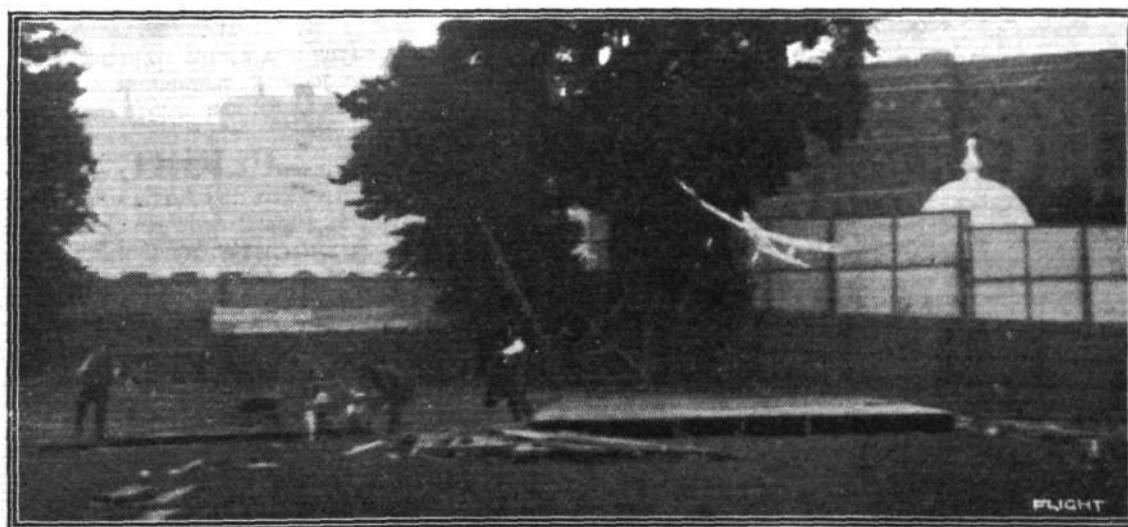


Photo. by Mr. F. Bromhead.

Single screw rook's wing tractor monoplane model constructed by Mr. W. A. Smallcombe.



## "EVENT B.—Contest for Multiple Screw Models.

1st ...	R. T. Howse ...	No. 24 ...	72½ per cent.
2nd ...	W. A. Smallcombe ...	37 ...	50½ "
3rd ...	E. Martin ...	26 ...	50 "
4th ...	J. B. Allen ...	17 ...	49½ "
5th ...	J. E. Gordon Stephens ...	20 ...	47½ "
6th ...	S. H. Baker ...	18 ...	43 "
7th {	L. J. Clark ...	22 ...	42½ "
	N. Gordon Stephens ...	38 ...	42½ "
8th ...	W. A. Smallcombe ...	28 ...	31 "

## "EVENT C.—Target Contest.

1st ...	S. H. Baker ...	No. 18...	22 ft. from the bull's eye
2nd ...	A. E. Pearse ...	15...	50 "
3rd ...	R. C. Cross ...	16...	60 "

## "EVENT D.—Looping-the-Loop Contest.

1st ...	R. T. Howse...	No. 32...	5 complete loops
2nd ...	E. Martin ...	33...	3 "
3rd ...	A. G. Botterill ...	14...	1 " loop"



## KITE AND MODEL AEROPLANE ASSOCIATION.

### Official Notices.

#### British Model Records.

Single screw, hand-launched	Duration ...	J. E. Louch ...	95 secs.
	Distance ...	R. Lucas ...	590 yards.
Twin screw, do. ...	Duration ...	G. Hayden ...	137 secs.
	Distance ...	W. E. Evans ...	290 yards.
Single screw, rise off ground	Duration ...	J. E. Louch ...	68 secs.
	Distance ...	L. H. Slatter ...	365 yards.
Twin screw, do. ...	Duration ...	J. E. Louch ...	2 mins. 49 secs.
Single-tractor screw, hand-launched ...	Duration ...	C. C. Dutton ...	266 yards.
	Distance ...	J. E. Louch ...	91 secs.
Do., off-ground ...	Duration ...	C. C. Dutton ...	190 yards.
	Distance ...	J. E. Louch ...	94 secs.
Single screw hydro., off-water ...	Duration ...	L. H. Slatter ...	35 secs.
Single-tractor, do., do. ...	Duration ...	C. C. Dutton ...	29 secs.
Twin screw, do., do. ...	Duration ...	S. C. Hersom ...	65 secs.
Engine driven off grass ...	Duration ...	D. Stanger ...	51 secs.

Competition.—On August 15th the fourth annual competition for the Wakefield Challenge Cup was held on Mitcham Common, on the ground of the Croydon and District Aero Club. The competition was delayed on account of the heavy rain till 4.30, when a start was made. The results of the first 6 were as follows:—1. J. Louch, K. and M.A.A. and Leytonstone, 86 marks; 2. H. H. Bedford, K. and M.A.A. and Leytonstone, 46; 3. H. Bond, K. and M.A.A. and Leytonstone, 45; 4. D. A. Pavely, K. and M.A.A. and Croydon, 42; 5. J. McBurnie, K. and M.A.A. and Aero Models, 35; 6. P. W. Peel, K. and M.A.A., 28. Mr. Louch, therefore, holds the handsome Wakefield Cup for one year, and wins the gold medal, both presented by Alderman Sir Charles Wakefield, D.L., J.P., Messrs. Bedford and Bond winning respectively the silver and bronze medal of the Association. Messrs. W. H. Akehurst and H. Lyche were the judges.

Kite Contests.—To-morrow, Saturday, the annual competition for the Trollope Cup takes place on Wimbledon Common at 3.30 p.m., followed by the Ladies' Competition, postponed from July 25th.

Kite Flying Competition.—Wimbledon Common, September 5th, at 3 p.m.; entries close August 29th. The Michelin Challenge Cup (presented by the Michelin Tyre Co.). Prizes: 1st, silver medal of the Association, and winner to hold trophy for one year; 2nd, silver medal of the Association; 3rd, bronze medal of the Association. Additional rules governing this competition:—1. Competitors must use a team of three kites, with a minimum total measurement of 80 ft., computed by Rule 2. 2. Competitors must be at the judges' flag at 2.30 p.m. sharp, any not then present will be disqualified. 3. Total length of line or wire to be 500 yards, but not exceed 510 yards. 4. Each competitor is allowed three assistants, who must wear the competitor's number. Any other person assisting will render the competitor liable to disqualification. 5. Points of attachment to be 100 yards apart, and length of attaching lines (if used) not to exceed 100 yards. 6. A dynamometer will be attached vertically 25 yards from the competitor's stake. 7. Marks will be awarded as follows: Lift, the figure obtained by dividing the lbs. registered, by the area of materials in kites; stability, 125; strength of construction, 75; portability, 50.

27, Victory Road, Wimbledon. W. H. AKEHURST, Gen. Hon. Sec.

## AFFILIATED MODEL CLUBS DIARY.

Club reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Leytonstone and District Aero Club (23, WOODHOUSE ROAD).

AUG. 22ND, flying as usual on Wanstead Flats at 6.30 and 10.30.

N.E. London Model Ae.C. (47, JENNERRD, STOKE NEWINGTON, N.)

AUG. 29TH, Hackney Marshes will be used for the Kite and Model Aeroplane Association official trials. Homerton Station, N.E. London Railway, most convenient. On leaving the station turn first to left and then to right into Homerton High Street; five minutes' walk, over canal bridge, will bring competitors into south side of flying ground. Direction of wind will determine r.o.g. ground.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).

AUG. 22ND, flying at Sudbury, single tractors. Aug. 29th, club competition for President's prize, value £1 1s. Models must be single-screw tractors r.o.g., minimum weight 4 ozs., no restriction as to loading, average of three flights for duration.

## UNAFFILIATED CLUBS.

Finsbury Park and District (66, ELFORT ROAD, HIGHBURY, N.).

AUG. 22ND, flying at Finsbury Park (kite ground) from 3.30 p.m.

S. Eastern Model Ae.C. (154, PECKHAM RYE, S.E.).

USUAL flying this week-end. Members are requested to push on with the construction of single-propeller monoplanes intended for next month's Trophy Competition.

## CORRESPONDENCE.

### Royal Flying Corps Families Relief Fund.

[1883] The Aerial League of the British Empire propose, with the concurrence of Brigadier-General Sir David Henderson, K.C.B., D.S.O., and Capt. M. T. Sueter, R.N., C.B., to give such help as may be possible to the wives and children of the Petty Officers, Non-Commissioned Officers and men of the Naval and Military Wings of the Royal Flying Corps who are about to proceed on active service.

Everyone must admire the devotion which these men display in carrying out their onerous and arduous duty; and it would be a source of great comfort to them, and relieve them of much anxiety, if they knew that their wives and children would be well looked after during their absence.

The Aerial League, therefore, appeal for funds to enable them to carry out this object, and they feel confident that they will not appeal in vain. The Fund will in no way clash with the Prince of Wales's National Relief Fund, because it is intended solely for the relief of families of married men in the Royal Flying Corps who are on active service.

Any sums, however small, will be most gratefully received, and will be acknowledged in the Press. Cheques or Post Office orders may be sent either to the Hon. Treasurer of the Aerial League at Windsor House, Kingsway, W.C., or to Messrs. Cox and Co., 16, Charing Cross, S.W., who have kindly consented to open an account to the credit of the Royal Flying Corps Families Relief Fund.

H. T. ARBUTHNOT, Major-General,  
Chairman of the Aerial League of the British Empire.

August 17th.



## The Price of Petrol.

ARRANGEMENTS have been made by the Motor Trade Association with the petrol companies that their agents shall sell petrol at a profit of 3d. per gallon over the wholesale price. The present retail prices are therefore 1s. 7d. and 1s. 9d. per gallon. All users of petrol are asked to assist the petrol companies at the present time by returning empty cans as quickly as possible.

## R.R. and Aviation Work.

In the present emergency the splendid engineering equipment of Messrs. Rolls-Royce at their Derby Works is being turned to account in the cause of aviation. The firm are now prepared to undertake any work in connection with the aeroplane industry, or the building of engines, &c.

## Another American Aviatress.

FOLLOWING the example of her sister, Miss Katherine Stinson, who has been flying a Wright biplane for a long time in various parts of the States, Miss Marjorie Stinson has just qualified as a pilot at the Wright School at Dayton. She is now going to Chicago in order to fly her sister's "Wright" at the Cicero aerodrome of the Aero Club of Illinois.



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